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NATIONAL CANCER INSTITUTE

ANNUAL REPORT

October 1, 1979 through September 30, 1980

Part I

OFFICE OF THE DIRECTOR

U.S. National Cancer Institute
Bethesda, Maryland

NATIONAL CANCER INSTITUTE

ANNUAL REPORT of program activities

October 1, 1979 through September 30, 1980

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NATIONAL CANCER INSTITUTE

ANNUAL REPORT

Introduction

DeVITA APPOINTMENT

Dr. Vincent T. DeVita, Jr. was appointed by President Carter as the ninth Director of the National Cancer Institute on July 9, 1980.

Dr. DeVita had been acting Director of the Institute since January 1, 1980, replacing Dr. Arthur C. Upton, who resigned to head New York University's Institute of Environmental Medicine.

He joined the NCI in 1963 as a clinical associate. In 1974, he was named Director of the Division of Cancer Treatment. One year later, he was appointed Clinical Director of the Institute, a position he will continue to hold as the new Director.

Dr. DeVita gained international reputation in developing the multidrug treatments that have moved Hodgkin's disease and other lymphomas from the incurable to the often curable list.

A native New Yorker, Dr. DeVita received his Bachelor of Science degree from the College of William and Mary in 1957, and his Doctor of Medicine Degree with distinction in 1961 from George Washington University Medical School. For his outstanding research and medical leadership he has received a number of honors and awards including the Albert and Mary Lasker Medical Research Award.

UPTON DEPARTURE

Dr. Arthur C. Upton, eighth Director of the National Cancer Institute, resigned on December 31, 1979. His resignation was submitted in order to assume the directorship of the Institute of Environmental Medicine at New York University. Dr. Upton was appointed Director of the NCI by the President on July 29, 1977.

NCI CONSENSUS DEVELOPMENT CONFERENCES FOR FY 80

During FY 80 a consensus conference on "Cervical Cancer Screening: The Pap Test" was held. The conference explored the use of the Pap test as a routine screening examination, its frequency at various ages, the reliablility of the test, and diagnostic and therapeutic aspects of screening programs for cervical cancer. The conference was sponsored by the National Cancer Institute in conjunction with the National Institute on Aging, and the National Center for Health Care Technology.

A second consensus conference held in FY 80 concerned the clinical use of carcinoembryonic antigen (CEA). The conference examined the effectiveness of CEA as a screening, diagnostic, staging, and monitoring technique for a number of cancers.

"Adjuvant Therapy in Breast Cancer" was the topic of a third NCI-sponsored consensus conference this year. The conference examined the role of adjuvant therapy in the management of breast cancer and included discussion of acute and chronic toxicities of such treatment.

FIRST BILLION DOLLAR BUDGET

NCI reached a major milestone in FY 80 when its budget appropriation was approved in excess of one billion dollars. Other noteworthy dates for NCI appropriations include 1947 when it exceeded one million, 1958 when it exceeded fifty million and 1961 when it exceeded one hundred million.

RESEARCH ON BIOLOGICAL EFFECTS OF LOW-LEVEL IONIZING RADIATION

Planning for a program of low-level ionizing radiation research, to complement but not replace ongoing research in other agencies, is currently being pursued in the National Cancer Institute.

Some research is currently funded, or under consideration for funding through this initiative within FY 80. Plans for specific program announcements are being developed. Because of the current effort to develop a general strategy for Federal research into the biological effects of ionizing radiation, the efforts to coordinate the research program on low-level radiation with other agencies will be most effectively applied after the details of the strategy have been formulated. It is anticipated that this will be ready for consideration during FY 81.

The major elements of the planned NCI program include the following:

- Determination of dose dependency of mutagenesis and carcinogenesis (cellular transformation) for both external radiation and internal emitters, and how this dependency is modified by the quality of radiation distribution in time (e.g., single dose vs. many doses), by the physiological condition and demographic characteristics of exposed populations, and by other biological modifiers of response.

- Identification, development and application of methods of protecting human populations.

- Development of technology and methodology required for the conduct of research and the measurement and assessment of research results.

- Review of the resources required to plan and implement information systems, education and demonstration programs and other support activities.

REORGANIZATION

The extensive NCI reorganization, which began on May 15, 1978, culminated on June 30, 1980 when the Secretary of the Department of Health and Human Services approved the final phase of the reorganization. The total reorganization process was designed to:

- Bring NCI into compliance with Departmental requirements for separation of program management from grant and contract administration, and from the peer review of grants and contracts.

- Bring the organization of the NCI more nearly into conformity with the organizational patterns of other NIH institutes for the above mentioned activities.

- Provide each programmatic division equal access to grants and contracts mechanisms in implementing program needs, to assure balanced, non-duplicative support of program activities.

- Establish a new centralized responsibility in the Division of Extramural Activities for promulgating and managing NCI policies governing review and use of extramural mechanisms.

- Establish a centralized responsibility in the Division of Resources, Centers, and Communicty Activities (formerly the Division of Cancer Control and Rehabilitation) for strengthening and reorienting NCI programs to make them more responsive to needs in the areas of prevention and transfer of research findings.

- Provide an organizational focal point within the Institute for integrating Institute-wide activities of education, training, construction, centers and organ site programs.

An organization plan was developed for each of the five NCI Divisions in conformity with the broad organizational principles expressed above. In implementation of these plans, a series of reorganization orders was issued to achieve a phased, incremental approach to reorganization. The capstone of the effort, Secretarial approval of the reorganization, allowed the NCI to implement Division and Program changes finalizing the process.

STAFF CHANGES, ACTIVITIES, HONORS AND AWARDS
1980

Meritorious Service Medal

Dr. Thomas A. Waldmann

Commissioned Officers Award

Dr. Harry Milman
Dr. Thomas Cameron
Dr. Richard Ungerleider
Dr. John Mulvihill
Mr. Robert Ostrowski
Dr. Philip Pizzo
Dr. Peter Howley
Dr. Berton Zbar
Dr. John Minna
Dr. David Poplack

PHS Special Recognition Award

Dr. Umberto Saffiotti

Merit Award

Ms. Carole L. Yee
Mr. Pasco Delvecchio
Mr. Donald Christoferson
Ms. Catherine Thomas
Ms. Bettie Sugar

Staff Changes - Office of the Director

Dr. Vincent T. DeVita, Jr. appointed Director, NCI

Dr. Diane Fink appointed Associate Director for Medical Applications of Cancer Research

Mr. Robert Namovicz appointed Acting Executive Officer, Office of Administrative Management

Mr. Harley Husted appointed Acting Administrative Officer, Office of Administrative Management

Mr. Thomas L. Kearns appointed Chief, Management Policy Branch, Office of Administrative Management

Staff Changes (Continued)

Ms. Marianne Wagner appointed Chief, Personnel Management Branch, Office of Administrative Management

Dr. Joseph Saunders appointed Acting Associate Director, Office of International Affairs

Mr. Robert Denniston appointed Chief, Information Projects Branch, Office of Cancer Communications

Mrs. Maxine Richardson appointed Head of Equal Employment Opportunity Activities

Staff Changes - Division of Cancer Biology and Diagnosis

Mr. Larry Willhite appointed Administrative Officer, DCBD

Dr. David Sachs appointed Acting Chief, Immunology Branch, Immunology Intramural Research Program

Dr. Maxine Singer appointed Chief, Laboratory of Biochemistry, Intramural Research Program

Dr. Brian Kimes appointed Chief, Cancer Biology Branch, Extramural Research Program

Dr. Claude Klee appointed Chief, Macromolecular Interactions Section, Laboratory of Biochemistry, Intramural Research Program

Dr. Mark Willingham appointed Chief, Ultrastructural Cytochemistry Section, Laboratory of Molecular Biology, Intramural Research Program

Dr. Kenneth Yamada appointed Chief, Membrane Biochemistry Section, Laboratory of Molecular Biology, Intramural Research Program

Dr. Michael Gottesman appointed Chief, Molecular Cell Genetics Section, Laboratory of Molecular Biology, Intramural Research Program

Dr. Sankar Adhya appointed Chief, Developmental Genetics Section, Laboratory of Molecular Biology, Intramural Research Program

Dr. Lewis Lipkin appointed Chief, Image Processing Section, Laboratory of Pathology, Intramural Research Program

Dr. David Zopf appointed Chief, Biochemical Pathology Section, Laboratory of Pathology, Intramural Research Program

Dr. Robert Blumenthal appointed Chief, Membrane Structure and Function Section, Laboratory of Theoretical Biology, Intramural Research Program

Staff Changes - Division of Cancer Cause and Prevention

Mr. Stephen A. Ficca appointed Administrative Officer, DCCP

Dr. Louis R. Sibal appointed Associate Director for Program, DCCP

Dr. Joseph Fraumeni appointed Acting Associate Director, Field Studies and Statistics Program

Dr. Donald Luecke appointed Acting Chief, Special Programs Branch, Carcinogenesis Extramural Program

Dr. George Khoury appointed Acting Chief, Laboratory of Molecular Virology, Carcinogenesis Intramural Program

Staff Changes - Division of Resources, Centers, and Community Activities

Dr. William Terry appointed Acting Director, DRCCA

Mr. Nicholas Olimpio appointed Administrative Officer, DRCCA

Dr. Andrew Chiarodo appointed Chief, Organ Site Programs Branch, Research Resources Program

Dr. Donald Pitcairn appointed Acting Chief, Cancer Centers Branch, Research Resources Program

Staff Changes - Division of Extramural Activities

Dr. William A. Walter, Jr. appointed Acting Director, DEA

Ms. Jean Stein appointed Administrative Officer, DEA

Dr. David L. Joftes appointed Chief, Contracts Review Branch

Dr. Dennis F. Cain appointed Chief, Grants Review Branch

Staff Changes - Division of Cancer Treatment

Dr. Saul A. Schepartz appointed Acting Director, DCT

Mr. Michael Goldrich appointed Administrative Officer and Chief, Administrative Management and Planning Branch, Office of the Director

Mr. Donald P. Christoferson appointed Chief, Budget and Program Analysis Section, Administrative Management and Planning Branch, Office of the Director

Staff Changes (Continued)

Ms. Jean G. Baum appointed Chief, Publications Section, Scientific Information Branch, Office of the Director

Dr. Bruce A. Chabner appointed Acting Associate Director, Clinical Oncology Program

Dr. David G. Poplack appointed Chief, Leukemia Biology Section, Pediatric Oncology Branch, Clinical Oncology Program

Dr. John S. MacDonald appointed Acting Chief, Biological Evaluation Branch, Cancer Therapy Evaluation Program

Dr. Daniel L. Kisner appointed Chief, Medicine Section, Clinical Investigations Branch, Cancer Therapy Evaluation Program

Dr. Richard S. Ungerleider appointed Chief, Pediatric Section, Clinical Investigations Branch, Cancer Therapy Evaluation Program

Dr. J. A. R. Mead appointed Deputy Associate Director, Developmental Therapeutics Program

Dr. Venkatachala L. Narayanan appointed Chief, Drug Synthesis and Chemistry Branch, Developmental Therapeutics Program

Dr. Michael Lowe appointed Acting Chief, Pathopharmacology Section, Laboratory of Chemical Pharmacology, Developmental Therapeutics Program

Dr. Moreshwar Nadkarni appointed Acting Chief, Extramural Research and Resources Branch, Developmental Therapeutics Program

Dr. Tony Mead appointed Acting Chief, Toxicology Branch, Developmental Therapeutics Program

Dr. Joseph Mayo appointed Chief, Animal Genetics and Production Branch, Developmental Therapeutics Program

Program Activities Report
Fiscal Year 1979-80
Editorial Office of the National Cancer Institute

The Board of Editors reviewed 804 manuscripts submitted for publication in JNCI during the 12-month period July 1, 1979, to June 30, 1980. These manuscripts were from the following sources:

National Cancer Institute: 50 (21 accepted, 18 rejected, 11 pending)
Other research institutions: 754 (182 accepted, 282 rejected, 290 pending or withdrawn)

Of the 754 manuscripts received from sources outside the National Cancer Institute, 266 were from authors in other countries, including Argentina, Australia, Belgium, Bulgaria, Canada, Denmark, Egypt, England, Federal Republic of Germany, France, German Democratic Republic, Greece, Hong Kong, Hungary, India, Israel, Italy, Japan, Mexico, Nigeria, Norway, Netherlands Antilles, Poland, Portugal, Romania, Saudi Arabia, Scotland, Singapore, Sweden, Switzerland, Taiwan, The Netherlands, Uganda, U.S.S.R., and Yugoslavia.

Volume 63 (July-December 1979) contained 1,565 pages, and volume 64 (January-June 1980), 1,571 pages, for a yearly total of 3,136 pages. In the January 1980 issue of JNCI, a special section on histologic typing of liver tumors of the rat presented an important collection of 57 color photomicrographs showing the morphologic classification of these tumors.

The printing and binding of volumes 63 and 64 were contracted out by the Government Printing Office to the McFarland Company in Harrisburg, Pennsylvania. This printer has continued to produce a particularly high quality of work.

Several 1979 issues of JNCI were entered in the publication competition sponsored by the Washington Chapter of the Society for Technical Communication, and JNCI was granted an Award of Achievement, as judged by superior editing, graphics, and total integration, in competition with other entries in the category of complete periodicals. As a result of suggestions made by competition judges, several improvements were planned in the physical appearance of JNCI. These include printing on a matte-finish, dull-coated paper to reduce reading glare and setting the abstracts in a medium boldface type for greater legibility. The July 1980 issue of JNCI will be the first to incorporate these changes.

Between July 1, 1979, and June 30, 1980, nine Monographs were in various stages of publication. The status of each Monograph follows:

- Perinatal Carcinogenesis (No. 51). Published July, 1979; 282 pp.

- Aspects of Cancer Research 1971-1978: Editorials from the Journal of the National Cancer Institute (No. 52). Published November 1979; 531 pp.

- Second Symposium on Epidemiology and Cancer Registries in the Pacific Basin (No. 53). Published December 1979; 205 pp.

- Experimental Evaluation of Antitumor Drugs in the USA and USSR and Clinical Correlations (No. 54). To be published December 1980. First printing contract terminated. New contract awarded late June 1980. (Original expected publication date was February 1980.)

- The Occurrence of Tumors in Domestic Animals (No. 55). Expected publication date September 1980.

- Surveillance, Epidemiology, and End Results Program: Incidence and Mortality Data: 1973-1977 (No. 56). Expected publication date November 1980.

- Sarcomas of Soft Tissue and Bone in Childhood (No. 57). Expected publication date January 1981.

- Conference on Carcinogenic and Mutagenic N-Substituted Aryl Compounds (No. 58). Expected publication date March 1981.

- Populations at Low Risk of Cancer, a Monograph not in the numbered series, will appear in the November 1980 issue of JNCI. Editing and proofreading of this Monograph is being done by two members of the JNCI staff.

The numbers of Monographs 54-56 are subject to change because of the termination of the contract for No. 54 and subsequent shuffling of printing schedules.

The editing and proofreading of all the above Monographs except the unnumbered one were (are being) done by the Monograph Editor. A part-time college student has provided valuable secretarial and editorial assistance.

Monograph 51, Perinatal Carcinogenesis, received an Award of Merit from the Society for Technical Communication for achieving third place in the book category of its annual publications competition. The Monograph was cited for its organization, clarity of presentation, readability, language style, and graphics.

Because of the demand for our Monographs, we are going back to press (second printing) on No. 48, 50, and 52 at the request of the Government Printing Office. The second printing of Monograph 51 came out in June 1980.

INTERNATIONAL ACTIVITIES

of the

NATIONAL CANCER INSTITUTE

FISCAL YEAR 1980

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A Report to the Director,

NATIONAL INSTITUTES OF HEALTH

INTRODUCTION

In pursuing the mandate of the National Cancer Act -- implemented almost ten years ago -- the National Cancer Institute can assume much of the credit for motivating among cancer research scientists a strong sense and solidarity of purpose that transcends national boundaries of the world. Today, an increasing number of world specialists engaged in cancer research find it virtually impossible to be out of the channel of communication with colleagues in other centers from other parts of the world. Now, rather than being one of pursuit by individuals, the current battle against cancer is more the work of teams working in research centers of excellence, scattered throughout the world. Their effort, multidisciplinary and concerted, is mediated significantly through international interaction for the exchange of scientific results and the generation of new ideas and approaches to cancer problems they share in common.

The contribution of the National Cancer Institute to this international team effort against cancer stems from: (1) the support of cancer research outside of the United States by foreign scientists who are highly qualified and reputed for unique expertise; (2) the support of cooperative research programs, principally, under bilateral agreements with foreign governments, institutions, or organizations; (3) maintenance of liaison and research collaboration with international organizations and agencies which have well-defined objectives in cancer research and cancer treatment/prevention; (4) the support of training of foreign scientists in the United States as well as the interaction of American scientists with colleagues in foreign laboratories; and (5) the management and operation of an International Cancer research Data Bank for promoting and facilitating, on a worldwide basis, the exchange of information for cancer research and treatment.

The reward of such collaboration between the NCI and international counterparts is the determination of the existence of striking differences in the geographic, environmental, demographic, occupational, and social/living conditions of peoples throughout the world. These variations are probably critical in their influence on the incidence of types of cancer prevalent or, even, endemic to a given area of the world. The elaboration and sharing of such knowledge on cancer causation, identification of population risk groups, availability of early detection measures and effective therapeutic intervention is essential to the management and ultimate prevention of cancer.

BILATERAL AGREEMENTS

Cooperative cancer research programs under formal government-to-government treaties and other forms of Bilateral Agreements comprise a major segment of the international activities of the National Cancer Institute. The first of these cooperative cancer research agreements was established on 23 May 1972 with the signing of the USA-USSR Agreement for Cooperation in the Fields of Medical Science and Public Health. Subsequently, additional bilateral programs were formalized between the NCI and the Japanese Society for the Promotion of Science (1974); the Institute of Oncology, Warsaw, Poland (1974), under the USA-Polish Peoples Republic Agreement; in 1975 with the French Institut National de la Sante et de la Recherche Medicale (INSERM) under an

earlier NIH Agreement with INSERM; the Cairo Cancer Institute (1975) under the aegis of the Agreement between the USA and the Arab Republic of Egypt; and the Ministry of Science and Technology of the Federal Republic of Germany (1976).

In 1980, negotiations continued toward cooperative programs between the NCI and the Ministry of Health of the Italian Republic and the National Institute of Oncology of the Hungarian Peoples Republic. In 1980, as well, agreement in principle has been reached by the NCI and the Cancer Institute, Chinese Academy of Medical Sciences, Peoples Republic of China (PRC) to implement collaboration in cancer research as stipulated in the agreement between DHHS and the PRC Ministry of Public Health, under the aegis of the 1979 USA-PRC Accord for Cooperation in Science and Technology.

The following sections deal with the progress that has been achieved in these cooperative efforts.

Cooperation with the Soviet Union

In 1979, a protocol had been adopted jointly concerning adjuvant therapy of patients with resectable advanced breast cancer. The study, being conducted by the Soviets, follows on earlier studies in the USA to compare the length of the disease-free interval in treated and untreated patients having breast cancer involving one or more metastatic axillary nodes. The objective is an evaluation of the efficacy of TAMOXIFEN (provided by the NCI) in the adjuvant treatment of resectable breast cancer. During the first year of study in the USSR, two clinical trials were undertaken. The first trial included 33 patients with Stage IV disease. Seventeen patients had soft tissue disease, 10 with lung disease, 3 with bone disease and 3 with multiple sites of metastases. All had prior therapy and all were post-menopausal. Fifteen of the 33 patients had a partial response, with the best effect of the drug being seen in older post-menopausal patients. The second trial included 9 patients, all of which were post-menopausal at an average age of 61 years. All except one patient, with visceral bone disease, responded to TAMOXIFEN therapy. In April 1980, in Moscow, American counterparts viewed the overall results of this study as satisfactory in that the drug was well tolerated and the response rate was considered to be excellent.

In April 1980, in Moscow, a joint review was completed on Soviet data presented for 4 chemotherapeutic regimens used for small cell carcinoma of the lung. 165 patients were studied under protocols adopted by virtue of the USA-USSR Agreement. All patients were Stage III or IV. The first regimen included cyclophosphamide, methotrexate, methyl-nitrosourea and 5000 rads of radiation therapy. The complete response rate in 32 patients was 22% and a partial response was observed in 50%. The median duration of complete response (confirmed by bronchoscopy) was approximately 11 months, and survival of these complete responders is longer than 24 months.

A second regimen of treatment was of identical design, except for the use of CCNU instead of methyl-nitrosourea. Of the 28 patients entered into the trial, a complete response was seen in 28 % and a partial response rate in 40%. The median duration of complete response was approximately 8 months and the median survival of the complete responders was in excess of 16 months.

The third therapeutic regimen involved Adriamycin, vincristine, DTIC and 5000 rads of radiotherapy to the primary tumor. A 31% complete and 55% partial response was achieved among 22 patients. The median duration of complete remission was approximately 9 months and the median survival for complete responders is 14.2 months.

The use of cyclophosphamide, methotrexate, CCNU, Adriamycin, vincristine and prednisone, without radiotherapy, constituted the fourth treatment regimen. Of 21 patients, the complete response rate was 14% and 40% indicated partial response. The median duration of complete response was only two months.

The American drug, Cis-platinum, in combination with other agents, was studied in the USSR for efficacy in treating a variety of malignant tumors. The trials were conducted in 58 patients according to 10 clinical protocols of American design. Objective response was seen in 2 of 12 patients with ovarian cancer, 7 of 17 with testicular cancer, 2 of 3 with breast cancer, 1 of 6 with renal carcinoma, 1 of 3 with primary liver cancer, 1 of 2 with osteosarcoma and in 3 patients with skin cancer. This study is continuing.

In May 1980, American results were presented to the Soviets on 110 potential anticancer agents provided to the NCI by the USSR. Some of the drugs were studied not only in ordinary transplantable tumors but as well in xenografts of human neoplasms (lung, breast, and colon) in nude mice. Some of the Soviet preparations are viewed with favor for further study in the USA including prospidin, chanerol, platin, variamycin, and reumycin. Reciprocally, the Soviets are interested in performing a study of the American drugs, AMSA, pentamethylmelamine, chlorozotocin, methyl-G, VP-16, dihydroxy-anthracenedione, and trimethoprim-sulfamethoxazole.

American and Soviet collaborators in "Cancer Chemotherapy and Combined Modalities of Treatment" view the publication of their second joint monograph as another important milestone in this cooperative effort. Analyzed in "Experimental Evaluation of Anticancer Drugs in the USA and the USSR" are the results of joint experimental drug research. New approaches are reviewed for assessing the potential anticancer activity of new drugs for clinical utility, based on the experimental data derived from joint studies. Two mathematical models are suggested among the approaches to establish a correlation between experimental and clinical data.

American and Soviet virologists met in the USA, in May 1980, to summarize the results of joint efforts in cancer virology. Americans reported on the role of herpesviruses in various human cancers; the isolation of virus associated with cells of patients with mycosis fungoides; the location in the virus genome of transforming gene(s) of retroviruses from different species; and the use of monoclonal antibodies to extend the attempts to relate viruses or virus precursors to human mammary carcinoma.

The consistent finding of Epstein-Barr virus DNA in tumor cells of Burkitt's lymphoma and cells of patients with nasopharyngeal carcinoma now has been matched by *in situ* hybridization tests that reveal herpes simplex virus nucleic acids in cells from cervical tumors.

The viral particles associated with cells of mycosis fungoides patients, although atypical, resemble type C virus. They do not cross-react significantly with RNA tumor viruses from a variety of animal species. Thus, the role of this agent in the disease process has not yet been defined.

Cells from draining lymph nodes of a patient, who had undergone mastectomy, were fused to mouse cells. Hybrid colonies were selected that were capable of producing antibodies reactive with antigens in mammary tumor tissues. The antibodies yield varying patterns of reactivity with mammary tumor tissue but do not react with normal breast tissues. The nature of the reactive antigen is presently unknown, but the tests developed should aid in diagnosis and in monitoring the spread of metastatic cells.

Soviet contributions were related to stationary virus producing cell lines, the role of adenoviruses in cancer and the characterization of lymphoma in baboons.

Stationary virus-producing cell lines were established from a lymphosarcoma (RLC) and an adenocarcinoma of a mammary gland (RMA). The morphologic and cytochemical characteristics of the RLC cells and the peculiarities of their submicroscopic organization suggest an involvement of thymus-dependent lymphocytes in the process of malignant transformation. Spontaneous production of type C virus was observed in RLC cells. The isolated virus had identical envelope antigens to those of known rat C-type oncoviruses. Stationary cultures of RMA cells spontaneously produced type C oncoviruses with envelope antigens identical to those of known rat retroviruses. Endogenous C-type retroviruses isolated from stationary RLC and RMA cells do not possess infectious or oncogenic properties for homologous cells.

Adenoviruses can regulate, to some extent, the outcome of their infection by the terminal protein covalently attached to ends of the DNA chain. Protein bound to the ends of adenoviral DNA does not have transforming or tumorigenic activities.

Information was presented for characterizing the lymphoma of baboons in the Sukhumi, Georgian SSR, vivarium, the dynamics of its spreading, the horizontal base of transmittance, and morphologic variations. The growth of antibody titer was demonstrated in sick primates, as well as in healthy ones, that were in contact with the primates that were ill because of various herpesvirus (HVP) antigens, as well as a substantial amount of DNA copies of HVP in DNA cells. Isolation of HVP has shown the existence of the family of lymphotropic herpesvirus. This fact was confirmed later during the isolation of herpesviruses of gorillas, orangutangs, and green monkeys.

Results were also presented on a study of the characteristics and dynamics of antibodies to various antigens of herpesviruses (HVP-EA, MA, VCA, HVPNA), as well as inclusion of DNA copies of HVP into DNA cells of: (1) sick primates; (2) healthy primates that were in contact with the sick ones; and (3) healthy primates that never have been in direct or indirect contact with those that were infected.

In 1979, a study was undertaken by Soviet scientists to develop a number of models that may be suitable for genetic analysis of the basic traits of neoplastic transformation. Biochemically marked clonal lines of mouse and Djungarian hamster cells were developed, including those with two genetic markers. These models have provided some new data indicating the absence of full correlation between transformation in vitro and malignant growth of cells in vivo. Thus, mutation of the thymidine kinase gene in Djungarian hamster cells resulted in a reduction of their ability to grow in vivo, whereas they expressed an ability to grow in semisolid medium as well as the transformed morphologic features.

Chromosome analysis of tumor cells was carried out in seven US laboratories. The expression of malignant transformation in mouse embryonic fibroblasts treated with radiation and chemical carcinogens were correlated with cytogenetic changes, particularly sister chromatid exchanges. Both, the phorbol ester tumor promoters and protease inhibitors that suppress the expression of transformation, were studied. Murine erythroleukemia cells were shown to have a very stable Q-banded karyotype over a period of several years. Cell lines developed independently had different marker chromosomes, but changes in chromosome 15 were a common feature in these tumor cells. An increased number of ribosomal RNA genes has been observed in certain sarcoma and hepatoma cell lines, with up to a ten-fold increase in the number of gene specific chromosomal sites. Most of the amplified ribosomal RNA genes are transcriptionally inactive and the inactivation of gene copies is associated with DNA methylation.

While in the United States, two Soviet cancer geneticists worked in collaboration with American colleagues at the M.D. Anderson Hospital and Tumor Institute, Houston, Texas. One jointly written paper was published dealing with the analysis of chromosomal aberrations and sister chromatid exchanges induced in the Chinese hamster cells by cyclophosphamide and its three metabolites, in the presence of a metabolic activating system (S9). It was shown that cytogenetic effects of cyclophosphamide were evident only after metabolic activation, whereas its three metabolites (acrolein, phosphoramide mustard, and nornitrogen mustard) induced a higher frequency of chromosomal aberrations and sister chromatid exchanges, both with and without S9. In a number of cases there was no parallelism in induction of chromosomal aberrations and sister chromatid exchanges, possibly indicating different mechanisms for their induction. Another paper, "Effects of Ftorafur on Chromosomes of the Djungarian Hamster Cells in the Presence of Liver Microsomes of Rats in Vitro" is being prepared for publication. The data therein show that, in the presence of S9 fraction, the frequency of chromosome aberrations induced by Ftorafur (Soviet analog of 5-fluorouracil) in 4 of 21 Djungarian hamster cell cultures was reduced to nearly 50% of that induced by Ftorafur alone. It was also demonstrated that Ftorafur did not increase the rate of sister chromatid exchanges both with and without the S9 microsomal liver fraction.

Cooperation with Japan

In May 1979, the Joint American-Japanese Steering Committee restructured this cooperative cancer program to provide greater flexibility and breadth in

order to accommodate current changes in the fields of cancer research. For the next five-year period, the eleven research specialities being pursued jointly were categorized into four broad Program Areas, namely, Etiology, Cancer Biology and Diagnosis, Cancer Treatment, and Interdisciplinary Research.

The major objectives of the Etiology Program Area are to identify carcinogenic factors and to elucidate the mechanisms of carcinogenesis in an attempt to provide fundamental bases for understanding the causation of human cancer. This program includes four closely interrelated subareas: epidemiology, chemical carcinogenesis, viral carcinogenesis, and genetics.

In March 1980, a joint workshop on "The Etiology of Stomach and Colon Cancer" was held in Honolulu, Hawaii. Fourteen participants from the USA and fourteen from Japan, engaged in a dialogue on: (1) the multidisciplinary search for etiology; (2) the comparative oncology of the colon and the stomach; and (3) a comprehensive search for carcinogen promoters and inhibitors. Efforts were focused on collation and integration of available information, methodology and ideas in different fields of etiologic research on cancers of the stomach and the colon-rectum. As to the comparative oncology of the colon and the stomach, the participants considered priority fields for future direction, for instance, the genetic influence on the occurrence of precursor lesions or those conditions which were well studied in colon cancer, but less so in stomach cancer. A need for multidimensional concept was stressed with regard to comprehensive discussions on possible carcinogens, initiators, promoters, and inhibitors.

A conference on "Molecular Mechanisms of DNA Synthesis in Cancer Cells" was held in Tokyo, Japan in March 1980. Six speakers from the USA and ten from Japan contributed to a fruitful exchange of new information on a problem that is fundamental to the understanding of the proliferation of cancer cells--the molecular mechanism of DNA replication. Clarification of this mechanism is required in order to elucidate the nature of abnormal growth of cancer cells, as well as to develop approaches to prevent the growth of tumor cells. The American and Japanese participants, acknowledging that a similar international meeting on this subject had not been held for several years, agreed that this meeting was most informative. It yielded an excellent summary of the research on mammalian DNA replication and stimulated attention to priority areas for future research. American participants, for instance, acknowledged that the new deoxynucleoside triphosphate analogues synthesized by Dr. Saneyoshi are very useful for enzymatic study on DNA replication. Agreement was reached for an exchange of the material.

During the past year visits to Japanese etiology research laboratories were made by 6 American scientists to present seminars and to engage in collaborative research. 6 Japanese researchers participated in fundamental research in American laboratories under the Etiology Program Area.

Plans are developing for conferences on "Biochemical Epidemiology" and "Interspecies Correlations in Chemical Carcinogenesis" in 1981.

In the Cancer Biology and Diagnosis Program Area, a joint seminar on "The Mechanisms of Host Tumor Immunity and the Theoretical Basis for Tumor Immumotherapy" was held in Maui, Hawaii, in October 1979. Presentations and discussions involved research efforts in the areas of: (1) the antigenic nature of tumor cells; (2) fundamental immunologic processes in host responses to tumors; and (3) new approaches and preclinical trials in tumor immunotherapy.

The antigenicity of tumor cells in experimental systems was evaluated critically in presentations which stressed the importance of identification of tumor-associated antigens. The relevance of such antigens to tumor sensitivity in immunotherapy was evaluated. The control of immune responses by specific immuno-regulatory processes was described in a number of tumor systems and new information concerning effector mechanisms mediated by macrophages and natural killer cells was presented. New approaches to tumor immunotherapy were discussed, based upon current experimental findings in areas of basic immunology and tumor immunology. This opportunity for interaction of these scientists was unique in that it provided a critical forum for the focusing on the perspectives of basic science in the development of new approaches to tumor therapy.

In November 1979, a group of virologists and molecular biologists convened a symposium of "Src and Leuk Genes" in Bethesda, Maryland. 14 Americans and 8 Japanese scientists focused on studies of the Src proteins and genetic interactions in sarcoma virus phosphorilation in transformed cells; viral and chemical carcinogenesis; virus-induced leukemic cells in experimental animals; and avian leukosis viruses.

The American-Japanese Working Group on Automated Cytology met in Los Angeles, in January 1980, to exchange information on "Automated Cytology and Development of New Techniques." 12 American scientists and 8 Japanese assembled to discuss sample preparation techniques in the development and application of automated slide-scanning instrument systems for cervical cancer detection; a flow cytometry system for detection of cancer of the cervix and the urinary bladder; new slide-scanning image analysis techniques for detecting malignant cells within cell clumps by means of multispectral measurements; and a review of the usefulness of flow cytometry in the study of cell kill kinetics. Other topics included a review of the progress in automated karyotyping by flow cytometry; the analysis of form changes in sperm DNA resulting from toxic chemicals or mutagens; methods for measuring the mutagen effect on other cell types; and new developments in multilaser multiparameter flow cytometry.

This Program Area, in general, has become more oriented toward developments in basic science and has provided maximum opportunity to exchange unpublished information and research ideas during joint meetings that are convened. During the year, 3 Japanese scientists spent a total of 6 months in the United States to collaborate on joint studies in immunology, molecular biology and computer science involved in automated cytology.

In the past year, the scope of the Cancer Treatment Program Area has broadened to reflect the full thrust of cancer therapy and to integrate the

research areas supported during the first five years of the American-Japanese agreement related to treatment. A joint advisory working group includes representation from the fields of surgery, radiation therapy, medical oncology, medicinal chemistry, and experimental tumor biology. The joint working group met in May 1979 to review and plan the program for cancer treatment. The principle objectives of the Program Area are to exchange information on: (1) the development of new anticancer drugs; (2) new developments in radiation oncology; (3) new immunotherapeutic approaches; and (4) combined modality studies most appropriate for specific disease sites, including lung, breast, gastric, and urinary bladder cancers.

A conference was organized in May 1979 in San Francisco for the review of new drugs in chemotherapy and a continuation of ongoing dialogues on cancer chemotherapy development in both countries. Analogues of existing drugs were emphasized. The anthracycline anticancer antibiotics continue to be an important drug group for this information exchange. Aclacinomycin A, an anthracycline discovered by Umezawa and found to be active in Japanese studies, will soon undergo trial in the United States. Interest in aclacinomycin A stems experimental studies indicating that it may have less cardiac toxicity than adriamycin. Aclacinomycin is a chemical analogue of Adriamycin. Other Japanese drugs, under clinical evaluation in Japan and of interest to American investigators include:

(1) PEP Bleomycin, a bleomycin analogue which may have diminished pulmonary toxicity;
(2) GANU and MCNU, two new nitrosoureas which may have less marrow toxicity and a superior therapeutic index compared to other nitrosoureas;
(3) HCFU, a new fluorinated pyrimidine; and
(4) Bestatin, a new nonspecific immune stimulator.

A seminar entitled "High LET and Allied Area in Radiology" was held in May 1979, in Kyoto, for discussions on accelerator design, particle physics, radiation biology, and radiation therapy. The success of the meeting is measured in the establishment of a cooperative program in this new area of fundamental research as an approach to cancer treatment.

The problems of lung cancer were considered in January 1980 during a seminar on the "Treatment of Lung Cancer by Chemotherapy Combined with Other Modalities." This meeting, in Osaka, provided an opportunity for discussions of lung cancer by a multidisciplinary group including thoracic surgeons, radiation oncologists, medical oncologists, and pathologists from both countries. As a result of past exchanges, the two countries now speak a common language concerning definitions in lung cancer, including such critical areas as pathologic subtyping, staging, and reporting of therapeutic results. Among the areas of pertinent discussion were: (1) new approaches to immune modulation an an adjuvant to intended curative surgical resection of lung cancer; (2) combined drug and X-ray approaches to oat cell lung cancer currently indicative of significant improvements in survival; (3) new drugs and drug combinations for all aspects of advanced lung cancer; and (4) new approaches to the use of radiation therapy in lung cancer.

The information generated during scientific exchanges in the treatment area continues to be of quality level for publication and scientific value to the medical community. The 1978 Program Review has been published and the 1979 Program Review is in press.

A collaborative study on the treatment of gastric cancer between the Northern California Oncology Group and a group of Japanese oncologists was initiated in 1978. A cooperative clinical trial is in effect for treating patients with advanced gastric cancer under protocols common to both countries. This study has had the benefit of a mutual comprehensive in the practice, analysis, and evaluation of clinical data as well as the development of future cooperative studies in the treatment of cancers. The Northern California group used the drug combination of BCNU, Adriamycin, and Ftorafur. The Japanese group used the three drug combinations of mitomycin C, Adriamycin, and Ftorafur. The common aim used in the study was Adriamycin and 5-FU. This study, now completed, has shown that Adriamycin plus a fluorinated pyrimidine is comparable to the three-drug regimens in terms of survival of patients with advanced gastric cancer. Survival is comparable to that in American Cooperative Group studies and confirms the general impression that Adriamycin is the critical drug to use in combination. The schema of the second US-Japan Joint Gastric Protocol is still under review and will be implemented in the neat future.

Chemical compoumds are being exchanged in quantity. Japanese screening data on these agents are accelerating the NCI screening of several of the agents of interest. American preparations of interest in Phase I and II cancers were given to Japanese clinical investigators.

The visit to Japan by three American scientists, experts in proton radiation therapy, was beneficial to the Japanese side inasmuch as research in this field is still in the initial stage of development in Japan. The future cooperation in this field is considered to be profitable to both countries. Continued interaction will occur on mutual approaches to the development and testing of high linear energy transfer approaches to radiation therapy. This may involve such things as a radiobiologic intercomparison of proton beams in both countries after the establishment of a common physical dosimetry.

A Japanese clinician from the Cancer Institute Hospital came to the M.D. Anderson Hospital and Tumor Institute, Houston, Texas to learn how breast cancer patients are received for diagnosis and treatment by a cooperative team of surgeons, radiologists, and clinical oncologists. It was very useful because, presently, in Japan breast cancer patients are accepted and treated most often in the department of surgery of the hospital.

Activities in the Interdisciplinary Program and Coordination Area during the past year focused on the analysis of radiation related breast cancer, especially in the atomic bomb survivors of Hiroshima and Nagasaki.

A planning meeting for a "US-Japan Cooperative Pathology Study of Radiation Related Breast Cancer" was held in July 1979 in the Department of Pathology, Vanderbilt University, Nashville, Tennessee.

A review and summation meeting on "US-Japan Cooperative Pathology Study of Radiation Related Breast Cancer" was held at the Radiation Effect Research Foundation (RERF, formerly ABCC) at Nagasaki and at Hiroshima, respectively, from 26 November to 4 December 1979. The purpose of this study was to determine: (1) if there are differences between breast cancer arising spontaneously in Japanese and American women and breast cancer developing in women exposed to radiation generated, especially, by the atomic bomb; and (2) if available data permit, the approximate minimal level of radiation required to induce breast cancer. The collected cases studied were: (1) breast cancer in atomic bomb survivors -- 150 cases; (2) breast cancer in nonexposed controls -- 150 cases; (3) breast lesions in autopsied non-breast cancer patients, whose exposures were known to be 100+ rad -- 50 cases; and (5) US radiation-related breast cancer, if any.

The conclusions from the summation meeting are:

(1) A confirmation that the number of breast cancer cases of atomic bomb survivors is 149 and of nonexposed age-matched control is 153, totaling 302.

(2) A confirmation that these 302 cases include those previously collected by McGregor et al. in 1971 and by Tokunaga et al. in 1978, and consist of all breast cancers known to have developed during the period of 1950 through 1978 among exposed and nonexposed females registered in the Life Span Study Sample at RERF.

(3) All participants agreed that subsequent analytic study of data accumulated through the histologic study of these 302 cases is expected to be made by the members.

(4) The analytic work should elucidate:

(a) the relationship between radiation dose and breast cancer development, and the minimal dose required for breast cancer development;

(b) the relationship between breast cancer development and age ATB;

(c) morphologic characteristics of breast cancer in atomic bomb survivors;

(d) prognostic evaluation of breast cancer in atomic bomb survivors; and

(e) changes in the breast tissue attributable to ionizing radiation, as revealed by the "Pilot Study".

As to potential radiation-related breast cancer cases in the United States, it was reported that histologic materials were not readily available from breast cancer among people who were treated with either repeated fluoroscopy of the chest or with x-irradiation for acute postpartum mastitis.

The preliminary conclusions indicate that all cases were classified according to a combined WHO-Japan Mammary Cancer Society classification. The combined classification scheme was adopted so that results could be compared with international studies using the WHO format and with other studies conducted in Japan.

A preliminary analysis indicates no significant difference in the distribution of histologic types between the irradiated and nonirradiated groups. The distribution did not differ from that expected for breast cancer in Japan as determined by other pathologists. Fundamentally, the distribution was not changed by considering the age ATB, age of diagnosis, interval from age ATB to diagnosis, and amount of irradiation. The peak age of diagnosis was the same in both groups. On the basis of this study, it was concluded that radiogenic breast cancer does not differ histologically from spontaneously occurring breast cancer in Japanese women, and no histologic features were found that distinguish radiogenic from spontaneous breast cancer. It should be emphasized, however, that further data analysis is being made.

The pilot study revealed no residual atypical or epithelial proliferative lesions in either lobules or ducts. However, there was fibroelastic degeneration of the stroma and atrophy of adipose tissue, changes that are associated with irradiation, but also found in other conditions, such as severe malnutrition. There was no real difference in histology, but there was increased incidence in exposed Japanese women.

The Joint NCI-JSPS Steering Committee held the annual review and planning meeting in June 1980 in Nara. The presentations by the Program Coordinators were well received and future plans for each of the Program Areas were discussed. Following the Steering Committee meeting, a large conference was held in Osaka on "Recent Topics in Cancer Research," cosponsored by the US-Japan Cooperative Cancer Research Program and the Japanese Cancer Association. Nineteen scientific presentations covered areas of fundamental and clinical cancer research, including multifactors in carcinogenesis, naturally occurring initiators and tumor promoters, polyoma virus genes, transforming genes of adenovirus, RNA tumor viruses, natural killer cells, tumor specific immunity, synthetic immunopotentiating agents, cytogenetics, combined modality therapy, new developments in radiation oncology, new clinical drug trials, US-Japan cooperative study of gastric cancer, comparison of breast cancer in Japan and the US hormone receptors, familial polyposis and developments in clinical etiology of Cancer.

During 1979, five American investigators, including three Americans involved in the breast cancer study, visited laboratories in Japan. A Japanese pathologist visited the NCI as an Exchange Scientist to review the results of the RERF study and to engage in collaborative research in experimental pathology.

The results of the RERF Breast Cancer Study are being prepared for publication. Future activities will include a continuation of the cytopathology of breast tissue which were reviewed. Comparative pathology studies are being planned.

Cooperation with the Polish Peoples Republic

In April 1980, the NCI with the Maria Sklowdowska Curie Memorial Institute of Oncology and Medical Academy of Warsaw jointly sponsored a "Symposium on Mutagenesis and Carcinogenesis," in Warsaw, Poland. The objective was to stimulate participation by Polish laboratories in research on mutagenesis and carcinogenesis as well as to obviate the environmental aspects of cancer. Topics included mechanisms of mutagenesis, DNA repair, metabolism of carcinogenesis, testing of carcinogens and the epidemiologic evaluation of environmental risk factors. The success of the symposium is attested by the initiation of research programs on epidemiology and toxicology related to the textile industry and research on the toxicology of food and water in two new institutions in Poland, the Institute for Occupational Medicine and the State Institute of Hygiene. One of the goals of the Institute of Oncology is a coordinated research program for the control of carcinogens in food, water, and industrial production.

During this year, seven Polish Exchange Scientists came to the USA for periods ranging from a few months to one year. Their research interests included tumor immunology, molecular biology, radiation therapy, hematology, tumor biology, and cancer histopathology.

In addition to the nine American specialists who participated in the Warsaw symposium, a senior NIH scientist spent a brief period of time in the Department of Nuclear Medicine of the Institute of Oncology, to discuss and plan collaborative research in cancer detection and diagnosis.

In April 1980, an agreement was signed for cooperation in pediatric oncology between NCI and the National Research Institute of Mother and Child in Warsaw. It formalizes continuing collaboration in the treatment of neuroblastoma and includes studies of other types of childhood cancer.

Cooperation with France

During a meeting in Paris, in December 1979, NCI agreed in principle to a French proposal for the reorganization of the American-French Program and combined the former Viral Oncology and Hormone/Cancer Working Programs into one which would be dedicated to Basic Research in Carcinogenesis. The other Program deals with Clinical Cancer Research.

The Clinical Cancer Research Program encompasses the activities which were included formerly under the Clinical Trials and Treatment Research Program. However, the scope has been expanded to include immunotherapy, hormone therapy and studies on hormone receptors. Thus, the American-French clinical research effort includes: (1) Phase I and II clinical trials and preclinical studies of the efficacy of anticancer drugs such as nitrosoureas, anthracyclines and platinum analogs; (2) Phase III studies of gastrointestinal tumors; and (3) the treatment of resistant breast cancer. Other collaborative efforts are devoted to the study of multiple pharmacologic and biochemical determinants.

The Program in Basic Research in Carcinogenesis is considered to be one of broad spectrum wherein meritorious scientific studies of a nonclinical nature are to be undertaken. These include such areas as cell proliferation, cell growth factors, normal and cancer cell differentiation, molecular genetics, tumor promoters, DNA repair, induction of cell transformation by DNA and RNA viruses, chemical and physical carcinogenesis, etc.

Because of the reorganization, scientific exchanges were delayed during the latter part of 1980. Earlier, however, seven American and six French scientists were appointed as Exchange Scientists in the Clinical Cancer Research Program. Under the combined Basic Research in Carcinogenesis Program, there were seven American and seven French investigators appointed in that capacity.

Cooperation with the Arab Republic of Egypt

The effort between the NCI and the National Cancer Institute of Cairo University continues under the Special Foreign Currency Program (PL 480 Program). Three ongoing programs include the treatment of bladder cancer, cytopathology of bladder cancer, and cooperative clinical studies, under the Southwest Oncology Group (SWOG), for the treatment of breast cancer, head and neck cancers, adult lymphomas, and childhood lymphoma.

In December 1979, a group of four American pathologists organized and conducted a four-day workshop on cancer pathology in Cairo. Topics included the cytopathology of urinary bladder cancer, soft tissue tumors, female genital tumors, malignant lymphomas, and surgical pathology. A practical session of the workshop was devoted to the examination of a special set of pathologic specimens from the Armed Forces Institute of Pathology and the National Cancer Institute.

During the year, a cancer biologist from the NCI visited the Cairo Institute to consult on the project dealing with the treatment of urinary bladder cancer. There were three radiologists from Egypt who received advanced training in the latest techniques in radiation oncology and two pathologists who received long-term training in cancer pathology at the University of Rochester and the University of Maryland. In addition, six Egyptian oncologists participated at two of the meetings of the Southwest Oncology Group held in the US.

Cooperation with the Federal Republic of Germany

During a meeting in June 1979 in Mainz, Germany, American and German scientists agreed to cooperative research on the long- and short-term testing of mutagenic and carcinogenic substances. Subsequently, a working group explored the possibilities for collaboration on: (1) the mechanisms of carcinogenesis; (2) in vitro test development; (3) occupational cancer; and (4) epidemiology. In April 1980, both sides met in Heidelberg, Germany, and established two broad areas of cooperation in carcinogenesis. These are: (1) causation and mechanisms in carcinogenesis, including evaluation and validation of methods in carcinogenesis research; and (2) prevention and modulation of the carcinogenic process.

Under the existing Automated Cytology Program, a senior investigator from the Los Alamos Scientific Laboratory visited the Battelle Institute in Frankfurt am Main to review the progress of collaborative studies. In the German Cancer Research Center in Heidelberg, the Max Planck Institute in Gottingen, and the University of Hanover he exchanged information and evaluated the stage of progress of research and development in automated cytology.

Cooperation with the Italian Republic

Pursuant to a meeing of American and Italian cancer specialists in April 1979, agreement was reached early in 1980 to pursue joint studies in Cancer Therapeutics and Cancer Prevention. American and Italian Working Groups for both of these programs have been established and meetings are scheduled for October and November 1980, respectively.

In Cancer Therapeutics, the following topics will be discussed initially and considered for implementation of collaborative research:

(1) Chemotherapy of Stage I-III Breast Cancer.

(2) Phase I Studies of Deoxycoformycin in Pediatrics plus Deaminase Monitoring.

(3) Phase II Pediatric Studies.

(4) Experimental Metastasis Models and Therapy Sensitivity.

(5) Fundamental and Clinical Studies of Biologic Response Modifiers.

(6) Studies of Pain in Adults and Children, plus Pharmacologic Monitoring.

The general topics of carcinogenesis and cancer epidemiology will provide the basis for basic research projects in Cancer Prevention.

Keynoting the American-Italian cooperative cancer research effort is a joint "Clinical Biochemical Pharmacology Workshop" scheduled for convention in Milan, Italy, in late October 1980.

Prior to the institution of the formal American-Italian cancer programs, two American epidemiologists visited Italy to participate in meetings and to visit cancer centers. As well, an American geneticist and a pediatrician visited Italian centers to survey the status of pediatric oncology and genetic research related to neoplasia.

Cooperation with the Hungarian Peoples Republic

Based on the exchanges with a delegation of Hungarian cancer researchers in the United States (December 1978) and Americans in Hungary (June 1979), proposals have been exchanged for the initiation of joint research in cancer covering the areas of cancer pathomorphology, immunology, and therapeutics.

Specifically, the American proposal recommended joint studies on the pathogenesis of hepatomas and the development and correlation of tissue and circulating tumor markers in liver cancer.

For the therapeutics segment, interest is expressed in:

(1) exchange of candidate antitumor agents;
(2) collaborative testing of selected exchanged agents;
(3) fundamental preclinical and clinical biochemical pharmacology;
(4) investigation of selective delivery systems for drugs;
(5) fundamental studies of the process of metastasis;
(6) preclinical toxicologic characterization of drugs;
(7) cooperative Phase I and II clinical trials; and
(8) selective areas in biologic response modification.

Initially, there would be an exchange of information on efforts in both countries related to cellular immunology, immune complexes, tumor associated antigens, membrane biology, and other aspects of cancer immunology.

The American response proposal is under consideration by the Hungarian Ministry of Health and the Hungarian institutes that would be party to the collaborative research programs.

Cooperation with the Peoples Republic of China

Responding in June 1980 to the Memorandum of Understanding negotiated in Beijing in November 1979 for the pursuit of an American-Chinese cancer program, the NCI recommended the following approach to Chinese counterparts. In lieu of undertaking a broad spectrum of cancer research activities, NCI preferences, in order of priority, are:

(1) Cancer epidemiology including studies of esophageal, nasopharyngeal, hepatocellular, and other prevalent cancers.

(2) Tumor biology, especially the molecular biologic approaches to establishing biochemical determinants and biologic markers.

(3) Early detection and diagnosis of those cancers epidemiologically associated with environmental and host risk factors and other possible determinants.

(4) Treatment research and anticancer drug development particularly those products of synthetic and natural origin such as herbal medicine preparations demonstrating anticancer properties and efficacy.

This NCI proposal is currently under review and consideration by the Chinese.

In the interim, informal discussions were held in April 1980 with Dr. Li Ping, Vice-Director of the Cancer Institute of Beijing, during her visit to NCI. Sbusequently, this information was made available to Minister of Health Qian Xinzhong when he met with NCI personnel in June.

Meanwhile, the NCI is hosting three Chinese cancer specialists, for one year each, as NIH Visiting Fellows. All three, from the Shanghai Cancer Institute, are here outside the USA-PRC Accord. One, an immunologist, is studying: (1) the mechanisms for the induction of in vivo tumor immunity; (2) immunosuppression by tumor cells; and (3) reversal of immunosuppression. The pathologist is working with cytologic techniques of both exfoliative and fine needle aspiration types and their applications, including special staining. And, the virologist is engaged in studies of tumor virus genetics.

Certainly, the multinational effort of the NCI that has been described is indicative of a wide range over the broad spectrum of cancer problems and the scientific disciplines related to their study (Figure 1). A definite pattern for the future stems from the establishment of a more cohesive and collaborative atmosphere among researchers utilizing similar or different research approaches to cancer throughout the world. The geographic separation of scientists and disciplinary research is a phenomenon of the past and an enhancement has been achieved in current awareness of what is being done, where, and by whom. Of course, the cancer patient or the potential cancer patient are the benefactors of new methods of early detection and diagnosis, more effective treatment and rehabilitation, and the realistic potential for cancer prevention in the future. Of immediate significance, is the improvement, in the past ten years, in the survival rates for many cancer patients, not only in the United States but the world over. Certainly, then, these binational efforts are exemplary of the sharing of "biomedical know-how" among nations and a step in the direction of an effort to raise the quality and productivity of life among people everywhere.

NCI-SPONSORED RESEARCH IN FOREIGN COUNTRIES

During 1980, the Divisions of Cancer Biology and Diagnosis, Cancer Treatment, and Cancer Cause and Prevention maintained extensions of these programmatic objectives in foreign countries through 53 contract research activities. The Division of Extramural Activities provided fiscal support, through 50 grants, to scientists in foreign institutions conducting basic and applied cancer research. Table 1 lists the number of NCI grants and research contracts that were awarded to 65 institutions in 22 countries.

The Division of Cancer Biology and Diagnosis (DCBD)

Investigators in six institutions in five foreign countries are participating in contract-supported research of relevance to the thrusts of DCBD. The cost to DCBD for this effort was $355,026. Exemplary research projects include the diagnostic application of antibodies to human tumor associated antigens (Australia); the use of fetal sulfoglycoprotein antigen in screening for gastric cancer (Finland); and the epidemiology of benign breast disease (Israel).

The Division of Cancer Treatment (DCT)

DCT research contracts have been awarded to investigators in thirteen institutions of six foreign countries for studies related to the characterization of anticancer agents; the search for potentially useful anticancer agents; the

screening and testing of such compounds; and clinical trials on specific cancers. The expenditure in foreign countries by DCT was $1,518,107.

Some eight years ago, DCT established a "Cancer Treatment Research Collaborative Office" at the Institut Jules Bordet in Brussels, Belgium. This facility serves cancer researchers and clinicians in the USA and Europe as a center of reference for the vast amount of pertinent information on ongoing cancer research programs in both continents. Its "liaison function" has been invaluable in promoting cooperative studies in experimental and clinical pharmacology and in clinical trials. In this context, there is a direct association with the European Organization for Research on the Treatment of Cancer (EORTC) which, among other activities, collects and manages data on clinical trials from Europe and serves as the coordinating center for clinical cooperative groups. By this means, the EORTC facilitates data collection, at a much faster rate, on the clinical evaluation of new drugs and therapeutic results from a large number of patients. Currently, there are approximately 88 studies in progress among the EORTC clinical cooperative groups. Two hundred and fifty institutions are involved in the trials and more than 8000 European patients are monitored by the EORTC data center. Approximately 18% of all compounds selected for tumor panel testing by the NCI originate in Europe. As of February 1980, there were 1200 compounds in the NCI panel which were provided by the EORTC. Several new compounds are of clinical interest and are being developed by NCI for Phase I clinical trial.

DCT's maintenance in Tokyo, Japan, of a liaison office for the collection of compounds and exchange of clinical information contributes significantly to NCI's cancer treatment program. On the order of 35 to 40 potentially useful drug materials are collected per month, including synthetic preparations and products of natural origin. During the period spanning June 1979 and February 1980, 204 synthetics and 47 natural products were collected from 24 Japanese institutions and 1149 tests were conducted there. Active new materials include synthetic cyanines; analogues of 5-fluorouracil, cytosine arabinoside, and imidazolyl carboxamide; and nitrosoureas. Among the natural products are fatty acid esters of a crude nagilactone-mixture, anthracycline antibiotics, and mitomycin C derivatives. GANU, a Japanese nitrosourea derivative, which is undergoing clinical trial in Japan, has been provided to NCI for parallel evaluation.

There is a continuation of cooperative preclinical and clinical research associations between American cancer centers and those of the United Kingdom, stimulated largely through DCT efforts and its partial support. The Institute of Cancer Research in London is contributing significantly to the DCT mission and is providing the basis for extension of toxicologic evaluation and Phase I studies of exchange drugs in the UK and Europe. Common DCT-ICR research activities center about the combination of bifunctional alkylating agents and steroids in chemotherapy.

In Italy, DCT supports partially the coordinating center for clinical study of melanoma in the National Institute of Oncology in Milan. There, as well, controlled clinical trials are continuing on breast cancer, gastrointestinal cancer, and tumors of the brain. The Mario Negri Institute in Milan screens

potential anticancer compounds, that are available in Europe, emphasizing studies of their pharmacology.

In association with the University of Dar Es Salaam in Tanzania, DCT is engaging in a study of the use of oral 13-cis retinoic acid as a chemopreventive agent of skin cancer in albino Africans. These people, living in the equatorial zone, are subject to the most intense ultraviolet irradiation on the surface of the earth and are candidates, virtually, to a 100% incidence of skin cancer.

Three years ago, DCT entered into a cooperative relationship with Latin American cancer institutes by virtue of the NCI-PAHO Collaborative Cancer Treatment Research Program (CCTRP). Clinical research activities are being pursued jointly by investigators in ten Latin American cancer institutes/hospitals and eight American cancer centers (Table 2). Currently, there are 27 active treatment protocols being evaluated in cancers of the breast, head-neck; the gastrointestinal, genitourinary, and gynecologic organs; and melanomas, medulloblastoma, sarcomas, lymphomas, and leukemias (Figure 2).

Preliminary results of the CCTRP trials are promising and the results of at least three completed studies have been submitted for publication.

Among the CCTRP studies, one is the Georgetown-GATTS study on the evaluation of the anticancer effectiveness of a drug combination in advanced measurable adenocarcinoma of the lung, stomach, and pancreas. The drug combination is 5-fluorouracil, Adriamycin, and Cis-platinum (FAP). To date, the results with gastric cancer are particularly encouraging. Two patients have experienced well documented partial responses, one in liver metastasis and the other, in a retrogastric mass. Eight more patients are stable on treatment or have experienced minor disease regressions. The lung patients are not as impressive with five minor responses and six with disease progression.

In another study, that of patients with resectable osteogenic sarcoma. Peruvian and colleagues from the Miami CCCSF have reached an early assessment that patients treated with Adriamycin only and amputation are more frequently subject to recurring disease and a fewer number of patients are surviving, suggesting that the addition of methotrexate to Adriamycin is adding to the therapeutic efficacy of the latter. They also suggest that radiotherapy to the primary tumor in combination with chemotherapy can eradicate primary disease, forestalling amputation of the involved extremity.

The Division of Cancer Cause and Prevention (DCCP)

DCCP is very active in its associations with international organizations and agencies which have well-defined objectives in cancer research, especially its cause and prevention. As well, DCCP is engaged in collaborative contract-research in 24 institutions/agencies in 16 foreign nations. These foreign extensions of the DCCP program thrusts include studies in epidemiology, cell biology, carcinogenesis, and virology. DCCP support for this foreign scientific effort amounts to $3,938,468.

Specifically, there is the study of in vitro radiosensitivity and DNA repair in genetic syndromes in families at high risk of malignancy being pursued by Atomic Energy of Canada, Ltd. Middlesex Hospital of England is studying carcinogenesis in humans. In the National Center for Scientific Research in France, interdisciplinary approaches are underway on nasopharyngeal carcinoma and associated human tumors. University of Ghana scientists are collecting chemical specimens for a comprehensive investigation of lymphoma. A study to investigate aspects of enzyme induction of chemical carcinogenesis to lung cancer incidence is in process at the Weizmann Institute of Israel. And, virologists and molecular biologists in Gothenburg University, Sweden, are exploring the biomolecular relationship of Herpesvirus to cancer.

The NCI and the DCCP, in particular, have been very supportive of the International Agency for Research on Cancer (IARC) and have utilized the expertise resident in the Agency to the fullest extent possible. The Agency has served as a coordinating focus, as well as an active participant in a number of international collaborative programs initiated and supported by the DCCP. The NCI and the DCCP benefit materially from the information generated by the Agency as a result of activities which are supported by its core budget or by other member states, for instance, from the IARC publication on "Molecular and Cellular Aspects of Carcinogen Screening Tests." This recent volume, among 27 such works by the IARC, is intended to contribute to the dissemination of authoritative information on specific aspects of cancer research.

Among the notable activities of the IARC, to which DCCP support contributes, are the IARC Monographs on the "Evaluation of the Carcinogenic Risk of Chemicals to Humans," exemplary of which is the 1980 compendium entitled "Chemicals and Industrial Processes Associated with Cancer in Humans." Other DCCP-supported research by the IARC includes:

(1) A program on the evaluation of carcinogenic risk of chemicals to man.

(2) Interdisciplinary studies on nasopharyngeal carcinoma.

(3) Seroepidemiologic studies of nasopharyngeal carcinoma and Burkitt's lymphoma.

(4) Laboratory and field studies in chemical carcinogenesis.

DCCP-supported activities of the UICC have been limited to those extant in the ICRDB Program which is an integral segment of the DCCP.

The interaction of DCCP with PAHO has been primarily through the ICRDB Program. Currently, however, DCCP is engaged in discussions with PAHO personnel on an epidemiology program which would be coordinated by PAHO and supported by DCCP. The program envisages multiple projects in a number of Latin American countries in collaboration with the NCI and other institutions in the United States.

The Division of Extramural Activities

Grants by the DIA have been made available to 32 institutions in 13 countries to a total financial outlay of $2,911,822. The scientific investigations include both basic and applied research and range over the spectrum of the thrusts and objectives of the NCI. Among these are the study of the mechanism(s) of nitrosoamine alkylation of DNA and RNA in the Ontario Cancer Institute, Canada. At the Finsen Institute in Denmark case control studies are underway on urinary bladder cancer. Investigation of the metabolic activation of polycyclic hydrocarbons is one of the sponsored activities at the University of London. Natural and tissue specific immunity to human neoplasms, is an area of immunology included in NCI-sponsored cancer research at the University of Helsinki in Finland. Receptors and growth factors for neoplastic cells are being investigated in the Weizmann Institute of Israel. And, at the Mario Negri Institute for Research on Pharmacology in Italy, studies deal with the treatment of disseminated cancer and cancer metastases.

THE INTERNATIONAL CANCER RESEARCH DATA BANK (ICRDB) PROGRAM

Now, an integral component of the Division of Cancer Cause and Prevention, the ICRDB Program is an international information resource for cancer researchers throughout the world. It is an effective, multifaceted system for promoting the rapid exchange of cancer research findings among scientists for effective utilization.

Major components of the ICRDB Program include: (1) three on-line computer data bases -- collectively known as CANCERLINE -- which enable scientists to easily retrieve cancer information at more than 1,100 locations within the United States and in 13 other countries; (2) several series of publications providing complete coverage of cancer research information in special formats designed for easy use and quick reference; and (3) a variety of specialized information collection, analysis, and dissemination activities. The CANCERLINE data bases are accessible through the computer system of the National Library of Medicine (NLM).

The computer data bases of the CANCERLINE system are: (1) CANCERLIT which contains more than 200,000 abstracts of published cancer literature, papers presented at meetings, books, technical reports, and theses; (2) CANCERPROJ containing descriptions of 17,500 current cancer research projects from 75 countries; and (3) CLINPROT with summaries of some 2,000 experimental cancer treatment protocols.

CANCERLIT is growing at a rate of nearly 40,000 abstracts per year, screened from over 3,000 biomedical journals. As of early 1980, all new entries to CANCERLIT are indexed with the MeSH vocabulary. CANCERPROJ offers the most comprehensive source available for ongoing cancer research project information, including more than 4,000 project descriptions collected from countries outside the U.S. CLINPROT provides worldwide access to summaries of new clinical cancer treatment protocols currently being evaluated at major American and foreign cancer centers.

Publications of the ICRDB Program include: (1) CANCERGRAMS which are monthly bulletins containing abstracts of recently published literature in 65 major cancer research areas; (2) SPECIAL LISTINGS of current cancer research -- annual compilations of ongoing research projects in 50 different cancer research areas; (3) ONCOLOGY OVERVIEWS or retrospective bibliographies with abstracts on 30 topics per year selected because of high current interest to cancer researchers; (4) Compilation of Cancer Therapy Protocol Summaries; (5) Directory of Cancer Research Information Resources; and (6) special collaborative publications.

From the latest entries to the CANCERLIT data base, CANCERGRAMS are prepared monthly by scientists at three Cancer Information Dissemination and Analysis Centers (CIDACs) and a network of nearly 100 researcher-consultants. They are disseminated as rapidly as possible to nearly 10,000 cancer researchers worldwide. The summaries in SPECIAL LISTINGS are extracted from the CANCERPROJ data base and compiled by scientists at the Current Cancer Research Project Analysis Center (CCRESPAC). ONCOLOGY OVERVIEWS contain abstracts from the CANCERLIT data base covering a period of several years, providing in-depth coverage of important cancer research topics. These OVERVIEWS are prepared by scientists at the CIDACs, with review and editorial commentary by eminent researchers in each topic area.

The Compilation of Cancer Therapy Protocol Summaries (4th Edition, April 1980) is derived from the CLINPROT data base and contains over 1,900 protocol entries. New features of this edition include: (1) the incorporation of all immunotherapy protocols published previously as a separate Compendium of Tumor Immunotherapy Protocols; and (2) a special section separately listing protocols that have been terminated. The Directory of Cancer Research Information Resources (2nd Edition, May 1979) contains over 800 entries covering a wide spectrum of resources available to health professionals.

There are six special information activities included in the ICRDB Program. A Clearinghouse for Ongoing Research in Cancer Epidemiology is supported jointly by the ICRDB Program, the International Agency for Research on Cancer (IARC) in Lyon, France, and the German Cancer Research Center in Heidelberg, Germany. The Clearinghouse collects, processes, and disseminates detailed data on research related to cancer epidemiology and human cancer causation in countries around the world. One of its annual publications is the Directory of Ongoing Research in Cancer Epidemiology. The 1980 Directory contains descriptions of 1,261 projects representing epidemiologic research efforts in 69 countries.

The Latin American Cancer Research Information Project (LACRIP) evolved in collaboration with the Pan American Health Organization (PAHO) and its Regional Library of Medicine (BIREME) in Sao Paulo. The ICRDB partially-supported LACRIP has developed and implemented mechanisms for identifying, collecting, and supplying to the CANCERLINE system Latin American biomedical literature and data about ongoing cancer related research projects in Latin America.

In cooperation with the UICC, partial support is provided by the ICRDB Program for a special Committee for International Collaborative Activities (CICA).

Operating within the framework of the UICC, CICA aids in the collection of information about ongoing cancer research projects (including clinical protocols) from countries around the world. As well, CICA promotes collaborative projects among cancer centers and cancer scientists in different countries. Periodically, CICA publishes an International Directory of Specialized Cancer Research and Treatment Establishments. As will be reported in a subsequent section, CICA sponsors the International Cancer Patient Data Exchange System (ICPDES).

Under contract to the ICRDB Program, the International Medical Information Center (IMIC), in Tokyo, coordinates the screening and collection of cancer-related information from Japan and other Asian countries for entry into the CANCERLINE data bases.

A Cancer Information Service to Developing Countries (CISDC) is now in effect through the British Library, supported by a contract with the ICRDB Program. CISDC provides searches of the ICRDB data bases and copies of useful articles are made available to scientists in nearly 100 developing countries.

SCIENTIST-TO-SCIENTIST COMMUNICATIONS PROGRAM

In 1975, scientist-to-scientist communication was enhanced when an offer by the International Union Against Cancer (UICC) in Geneva, Switzerland, was accepted within the ICRDB Program to encourage such an exchange of information through two different mechanisms. The first of these, the International Cancer Research Technology Transfer (ICRETT) Program promotes direct and rapid transfer of technical information between two or more investigators located in different countries. This is accomplished through the ICRETT awards for short-term visits which permit the scientists to exchange information related to new research developments and techniques. Since its inception, ICRETT awards have been granted to 435 international scientists representing 43 countries (Table 3). Table 4 shows the pursuit among 15 scientific disciplines by the ICRETT awardees. The other means for such communication is the International Cancer Research Workshop (ICREW) Program. ICREW provides partial support for workshops in cancer research wherein small groups of international scientists meet to discuss key cancer topics specific to each participant. Since inception of the ICREW, 62 workshops have been completed successfully through March 1980 (Table 5).

In many cases, ICRETT activities serve as a springboard for collaborative research between individual scientists and, ultimately, teams of them in different countries. For instance, an American chemist, upon invitation, was able to spend several weeks in the Kwangtung Botanic Institute of the Peoples Republic of China leading to the establishment of a collaborative program on the characterization of antitumor compounds from plants used for the empiric treatment of cancer in the PRC. Extracts from the plants are sent to Texas for fractionation and purification of the anticancer ingredient.

While in the Hutchinson Cancer Research Center, an Italian ICRETT Awardee was able to observe and learn certain immunologic techniques for use in determining histocompatibility between patients with acute lymphatic leukemia and donors of bone marrow for transplantation.

A Malaysian scientist, working at the University of Freiburg in West Germany, undertook comparative studies of the ultrastructure of biopsy material from patients with proved or suspect nasopharyngeal carcinoma. Conversely, an oral pathologist from Sri Lanka, while in Kuala Lumpur, Malaysia, engaged in intensive study there on the incidence of cancers of the oral structures and the classification and typing of malignant tumors of the oral cavity and their treatment.

Of the 62 ICREW workshops, one of the representative sessions of this year was the one dealing with "The Use of Hematoporphyrin Derivatives for the Treatment and Diagnosis of Cancer." Clinicians, chemists, physicists, and other disciplinarians met at the Roswell Park Memorial Institute to review and discuss their recent experiences in the use of hematoporphyrin derivative (Hpd) as both a diagnostic tool (biochemical marker) and therapeutic agent. Hpd localizes in malignant tumors and its presence there can be detected by virtue of its fluorescence. Thus, it may be of significance in the "early detection" of certain tumors. As a treatment agent, Hpd may have applicability because of its ability to photosensitize cells when it is activated by a light source such as laser beams transmitted through fiber optic systems.

The two programs, ICRETT and ICREW, in the view of many international figures, have demonstrated that means have become available for overcoming, what was considered only a few years ago, an insurmountable barrier to scientific communication.

THE INTERNATIONAL CANCER PATIENT DATA EXCHANGE SYSTEM (ICPDES)

In cooperation with the Committee on International Collaborative Activities (CICA) of the UICC, an International Cancer Patient Data Exchange System (ICPDES) has been established as an integral component of the ICRDB Program network for acquisition and dissemination of cancer research information. The ICPDES, as it is being developed, is different from both a traditional cancer registry and a clinical trial. Patient data is collected in an internationally standardized manner by five cancer centers in the United States, seven in Europe, and one each in Budapest, Hungary, and Moscow, USSR (Table 6). The total patient care spectrum is covered for a particular diagnosis rather than selected segments. A key feature basic to comparability of the end results of treatment is the adoption of precise and standardized methods of nomenclature, classification, and staging of disease.

The fourteen ICPDES-participating institutions, in two years of collaboration (November 1977 - November 1979), have amassed data on some 11,000 cases of cancer. These include 7098 breast cancer cases, 1197 colon, 1045 rectum, 997 larynx, and 730 Hodgkin's.

The results of two years of ICPDES effort indicate that a good working system has been established for uniformity of data collection, on an international scale and holds the capability for an excellent feedback system for the clinical researcher.

ICPDES currently provides a "core" information base for evaluating the history of the same types of cancer in different countries. It establishes a resource for quantitative cancer patient follow-up and the development of distinct patient survival curves. It has the potential for developing an internationally common language in cancer patient data management. It offers "quality control" advantages for utility of information in the research phase between clinical trials and end results. And, it provides an approach toward resolving differences in interpretation of data, e.g., histologic classification, disease staging, etc., between American, European, and other institutions.

THE NIH VISITING PROGRAM

During 1980, personnel of the National Cancer Institute served as hosts for scientists from 36 countries who came to the United States to engage in collaborative cancer research activities. As indicated in Table 7, there was a total of 207 foreign visiting scientists, associates, and fellows. Eleven Visitors were appointed as Experts and 23 came as Guest Workers, whose financial support comes from sources other than NCI. The activities of these scientists were pursued in the laboratories of the NCI Divisions of Cancer Treatment, Cancer Cause and Prevention, and Cancer Biology and Diagnosis.

These associations are mutually beneficial. The NCI host scientist is afforded opportunities to learn from his/her visitor about cancer problems in a given foreign country; of factors peculiar to that nation that might be related to morbidity and mortality of cancer; and of activities underway toward the management, treatment, and prevention of cancer. On the other hand, the foreign scientists are provided with unique opportunities to improve their mastery of the scientific method or to develop their potential for significant contributions to basic and/or clinical research. The value of such scientific interaction can be assessed, ultimately, on the knowledge that cancer patients throughout the world are benefiting from an improved quality of care.

SUMMARY

International collaboration in cancer research by the National Cancer Institute extends to locations in six of the seven continents of the world. This outreach is accomplished through bilateral agreements, research contracts and grants, the exchange of scientists and information, and a global network of communication of research information through mechanisms of the ICRDB Program, the IARC and UICC, and the WHO and PAHO.

Although this interaction with the world's scientific community has brought forth gains in the war against cancer, there are strongholds that are resistant even to this aggressive deployment of the skills of contemporary science. However, as our international struggle against cancer continues, additional knowledge will accrue on how normal cells become malignant. We should be able to determine more precisely what compounds and other factors are carcinogenic or pose a risk for cancer incidence.

As efforts are continued toward the rational design and development of more effective anticancer agents, we will benefit from an insight into possible

chemoprevention by virtue of an awareness of specific biochemical and pharmacokinetic action of chemicals in the control of cell differentiation and other cellular activities related to noeplastic growth.

A significant input from this international effort will be the accrual and analysis of demographic and geographic information endemic to a given population or region of the world, thus contributing to our understanding of the risk factors associated with a given cancer and the development of measures for cancer control and/or prevention.

Most important, however, is that continuous communication be maintained for the exchange of scientific information on cancer for the benefit of the peoples of all nations.

Table 1

Support by the NCI of Research in Foreign Countries by Contracts and Grants

COUNTRY	INSTITUTIONS	GRANTS	CONTRACTS	TOTAL
Austria	1		$ 57,983 (1)*	$ 57,983
Australia	4	$181,733 (4)*	114,817 (2)	296,550
Belgium	2	237,090 (1)	182,900 (3)	419,990
Canada	13	584,037 (15)	515,793 (5)	1,099,830
Columbia	1		50,692 (1)	50,692
Denmark	2	72,725 (2)		72,725
England	5	180,478 (2)	381,564 (5)	562,042
Finland	2	106,800 (3)	21,546 (1)	128,346
France	3	34,395 (1)	1,398,805 (7)	1,433,200
Germany	1		33,200 (1)	33,200
Ghana	1		75,343 (1)	75,343
Israel	6	650,826 (9)	175,583 (2)	826,409
Italy	4	116,690 (3)	528,104 (7)	644,794
Japan	6		665,835 (6)	655,835
Netherlands	1	15,000 (1)	90,000 (1)	105,000
Norway	1		85,600 (1)	85,600
Portugal	1		5,000 (1)	5,000
Scotland	2		105,000 (2)	105,000
South Africa	1	59,254 (1)		59,254
Sweden	5	464,066 (6)	391,880 (3)	855,946
Switzerland	2	208,728 (2)	857,456 (2)	1,066,184
Tanzania	1		75,000 (1)	75,000
22	65	$2,911,822 (50)	$5,812,101 (53)	$8,723,923

()* = Number of Contracts-Grants per Country

Table 2

THE NCI-PAHO COLLABORATIVE

CANCER TREATMENT RESEARCH PROGRAM (CCTRP)

Latin American Center	Protocols	USA Cancer Center
Grupo Argentino de Tratamiento de los Tumores Solidos (GATTS) Buenos Aires, ARGENTINA (Dr. Esteves)	(3)	Georgetown University Washington, D.C. (Dr. Woolley)
Grupo Argentino de Tratamiento de la Leucemia Aguda (GATLA) Buenos Aires, ARGENTINA (Dr. Pavlovsky)	(3 Adult) (2 Pediatric)	Georgetown University Washington, D.C. (Dr. Woolley)
Instituto Angel H. Roffo Buenos Aires, ARGENTINA (Dr. Olivari)	(1)	Georgetown University Washington, D.C. (Dr. Woolley)
Instituto Nacional de Cancer Rio de Janeiro, BRAZIL (Dr. Silveria)	(3)	M.D. Anderson Hospital and Tumor Institute Houston, TEXAS (Dr. Bodey)
Fundacao A.C. Camargo Sao Paulo, BRAZIL (Dr. Gentil)	(1)	Memorial Sloan-Kettering Cancer Center New York, NEW YORK (Dr. Burchenal)
Universidad Catolica de Chile Santiago, CHILE (Dr. Arraztoa)	(2)	Wisconsin Clinical Cancer Center Madison, WISCONSIN (Dr. Ramirez)
Instituto National de Cancer Bogota, COLUMBIA (Dr. Ospina)	(3)	Roswell Park Memorial Institute Buffalo, NEW YORK (Dr. Henderson)
Hospital de Oncologia Mexico City, MEXICO (Dr. Lira)	(1)	New York University Cancer Center New York, NEW YORK (Dr. Muggia)
Instituto Nacional de Enfermedades Neoplasicas Lima, PERU	(6)	Comprehensive Cancer Center for the State of Florida Miami, FLORIDA (Dr. Zubrod)

Table 2 cont.

THE NCI-PAHO COLLABORATIVE
CANCER TREATMENT RESEARCH PROGRAM (CCTRP)

Latin American Center	Protocols	USA Cancer Center
Departmento de Oncologia Hospital de Clinicas "Dr. Manuel Quintela" Montevideo, URUGUAY (Dr. Kasdorf)	(2)	Baltimore Cancer Research Program DCT, NCI Baltimore, MARYLAND (Dr. Wiernik)

Table 3: ICRETT Awards, 1976-1980

Origin of ICRETT Awardees	
Argentina	13
Australia	2
Austria	6
Belgium	7
Brazil	4
Bulgaria	2
Canada	13
China PRC	4
Columbia	1
Czechoslovakia	2
Denmark	1
Finland	4
France	28
Germany (Fed. Rep.)	24
Greece	4
Hungary	3
India	12
Iran	2
Israel	37
Italy	25
Japan	11
Kenya	1
Liberia	1
Malaysia	1
Mexico	2
Netherlands	7
New Zealand	1
Nigeria	5
Norway	9
Philippines	1
Poland	9
South Africa	1
Spain	3
Sri Lanka	2
Sweden	15
Switzerland	5
Taiwan (China)	1
Thailand	2
Uganda	1
United Kingdom	57
Uruguay	2
U.S.A.	99
Yugoslavia	5
	435

(43 countries)

Destination of ICRETT Awardees	
Argentina	1
Australia	8
Belgium	6
Canada	8
China PRC	4
Columbia	1
Denmark	4
Finland	5
France	22
Germany (Fed. Rep.)	29
Hungary	1
Iceland	1
India	2
Israel	6
Italy	10
Japan	19
Malaysia	1
Mexico	1
Netherlands	7
New Zealand	3
Norway	2
Poland	1
Sweden	29
Switzerland	19
Taiwan (China)	1
United Kingdom	51
U.S.A.	190
U.S.S.R.	3
	435

(28 countries)

Table 4

Scientific Disciplines of Study By ICRETT Awardees, 1976-1980

	Disciplines	1976*	1977	1978	1979	1980*	Total
1.	Epidemiology, Biostatistics and Registries	-	3	5	7	3	18
2.	Biochemistry, Molecular Biology and Biophysics	5	14	14	11	6	50
3.	Viral Carcinogenesis	7	13	10	9	5	44
4.	Chemical Carcinogenesis	3	14	8	13	5	43
5.	Cell Biology and Cell Genetics	1	15	11	8	5	40
6.	Experimental Pathology (including histopathology and cytology)	4	5	12	14	4	39
7.	Immunology	5	19	25	31	16	96
8.	Experimental Chemotherapy	6	3	2	9	2	22
9.	Surgery	-	1	2	-	3	6
10.	Clinical Chemotherapy and Endocrinology	2	3	1	8	6	20
11.	Radiobiology and Radiotherapy	5	4	7	10	2	28
12.	Controlled Therapeutic Trials	1	-	1	4	-	6
13.	Detection and Diagnosis	1	6	4	1	5	17
14.	Behavioral and Social Sciences Related to Cancer	-	-	1	-	1	2
15.	Environmental Factors and Prevention	-	2	-	1	1	4
	Annual Total of ICRETT Awards	40	102	103	126	64	435

*last 6 months of 1976 and first 6 months of 1980

Table 5

ICREW Program Activities, 1976-1980

Countries of Organizer	
Argentina	1
Australia	1
Austria	1
Canada	1
Chile	1
France	2
Germany, F.R.	4
Hong Kong, B.C.	1
Hungary	1
Iceland	1
Israel	3
Italy	4
Japan	2
Netherlands	1
Rumania	1
Switzerland	2
Sweden	2
Togo	1
United Kingdom	7
United States	25
Total	62
(20 Countries)	

Hosting Countries	
Argentina	1
Australia	1
Austria	1
Belgium	1
Canada	1
Chile	1
Denmark	1
Finland	2
France	4
Germany, F.R.	3
Hong Kong, B.C.	1
Hungary	1
Israel	2
Italy	7
Japan	2
Rumania	1
Sweden	1
Switzerland	3
Togo	1
United Kingdom	8
United States	19
Total	62
(21 Countries)	

Table 6

ICPDES PROGRAM PARTICIPANTS

- UNITED STATES
  - ---Duke University Comprehensive Cancer Center
  - ---M.D. Anderson Hospital and Tumor Center
  - ---Mayo Comprehensive Cancer Center
  - ---Memorial Sloan-Kettering Cancer Center
  - ---Roswell Park Memorial Institute
- WESTERN EUROPEAN CENTERS IN
  - ---Amsterdam
  - ---Bordeaux
  - ---Brussels
  - ---Essen
  - ---Heidelberg
  - ---Milan
  - ---Rotterdam
- EASTERN EUROPEAN
  - ---National Institute of Oncology, Budapest
  - ---Oncologic Scientific Center, Moscow

Table 7

FOREIGN NATIONALS AT NCI 1980

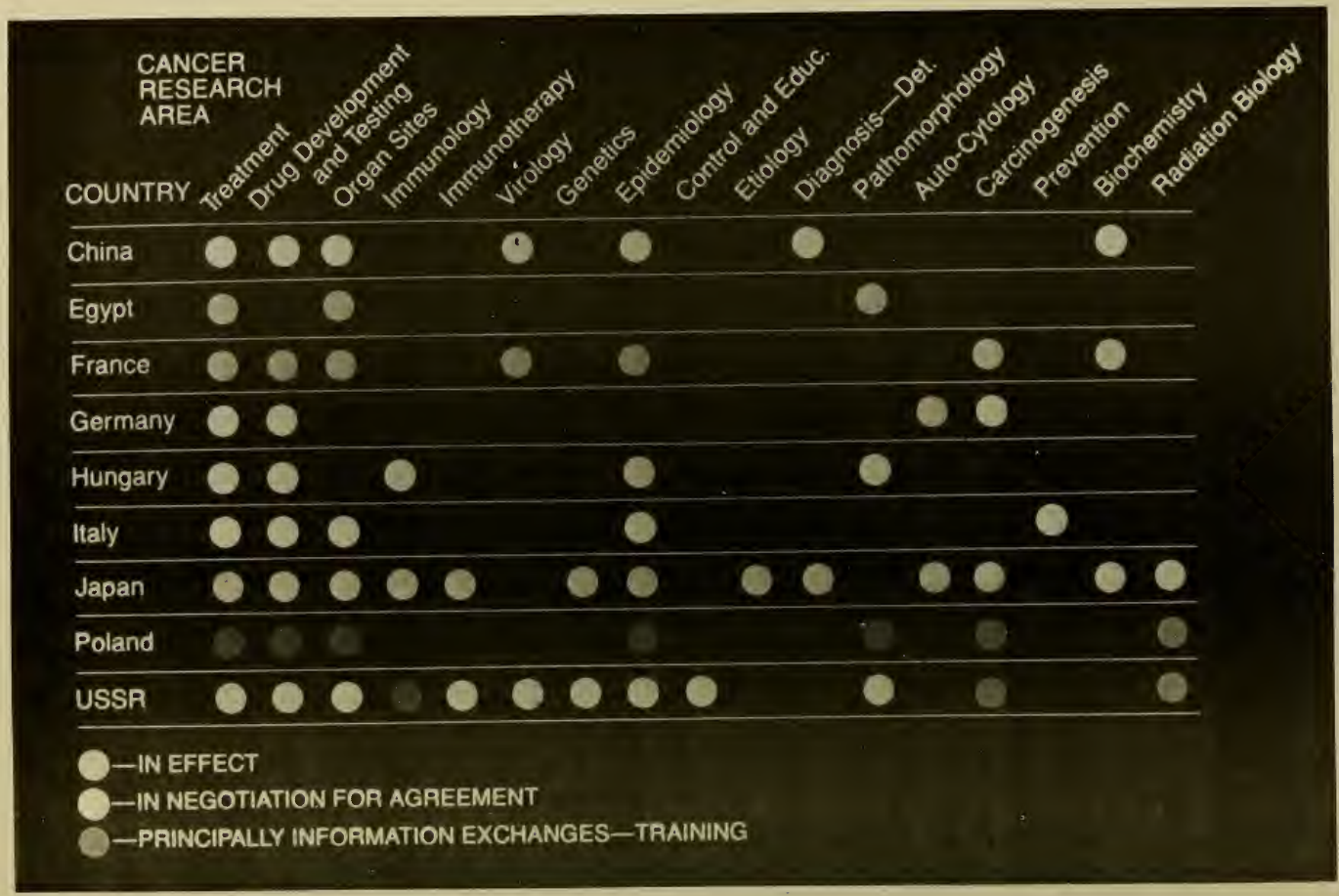
Visiting Fellows	146
Visiting Scientists	37
Visiting Associates	24
Guest Workers	23
Experts	11
Exchange Scientists	3
International Fellows	2
TOTAL	246

Figure 2 NCI-PAHO COLLABORATIVE CANCER TREATMENT RESEARCH PROGRAM (CCTRP)

ACTIVE PROTOCOLS / PAHO NATION & CENTER	Breast	Head & Neck	Genitourinary	Melanomas	Medulloblastoma	Sarcomas	Gastrointestinal	Lymphoma - Leukemia	Gynecologic	TOTAL
Argentina										
GATTS (a)			•			•	•			3
GATLA (b)					■ (c)	■ (c)		•••		5
ROFFO		•								1
Brazil										
Rio De Janerio	•	••								3
Sao Paulo		• (d)								1
Chile	•				■ (c)	■ (c)	•			2
Columbia				•		•		•		3
Peru	••	• (e)				•	•		• (e)	6
Mexico									•	1
Uruguay								•	•	2
TOTAL	4	5	1	1	1	4	3	5	3	27

(a) GATTS = Grupo Argentino de TRATAMIENTO de los TUMORES SOLIDOS--Hospital Militar Central
(b) GATLA = Grupo Argentino de TRATAMIENTO de la LEUCEMIA AGUDA
(c) Satellite Protocols with Children's Hospital Luis Calvo MacKenna in Buenos Aires
(d) Includes Genitourinary
(e) Associate Protocols--Pilot

Figure 1: Cooperative Cancer Research Activities under NCI Bilateral Agreements



ANNUAL REPORT
OFFICE OF THE DIRECTOR FOR PROGRAM PLANNING AND ANALYSIS (ODPPA)
NATIONAL CANCER INSTITUTE

OCTOBER 1, 1979 - SEPTEMBER 30, 1980

OFFICE OF THE DIRECTOR

The ODPPA provides leadership, consultation and direct participation in program analysis, program planning, and management information systems. Organizationally, it is located in the Office of the Director, NCI, to enable it more effectively to provide its services to all operating units of the NCI and, at the discretion of the Director, to non-Federal organizations participating in the National Cancer Program (NCP). Operationally, it carries out its responsibilities in close collaboration with NCI operating units, and other offices in the Office of the Director, NCI.

The Office consists of two branches: the Program Analysis and Formulation Branch (PAFB) and the Systems Planning Branch (SPB) which includes the MIS project office. The PAFB is typically staffed with M.D.'s and Ph.D.'s with broad laboratory and clinical research experiences in the major disciplines involved in cancer research. The SPB is staffed with professionals with extensive experience in general management, planning, operations research, systems analysis, and management and technical information systems. Although primary and continuing assignments are made to each branch based on expertise required, the Office typically operates on a project matrix system whereby members of both branches are assigned to specific projects to provide the mix of scientific and managerial talents required by much of the work performed by the Office. Thus, this annual report describes activities and accomplishments in terms of the three major areas of performance (Analysis and Formulation, Planning, Management Information Systems) rather than an accounting by branches.

ANALYSIS AND FORMULATION

Position papers, guidelines, and procedures are developed for the review and analysis of current programs and the implementation of new programs. Analytic services are provided in response to the specified needs of different NCI operating units.

A. The Science Content Analysis (SCAN) System, previously maintained by the TRW Systems Group, is now operated with the technical support of ORI, Inc. Under the guidance of PAFB staff, this company has improved some of the analytic methodologies and operating procedures for use in the FY '79 analysis of NCI supported projects. A data base was completed for these projects by ORI and was made available for comparison with another data base covering the research recommendations of the National Cancer Program Plan (NCPP). Computerized programs have been developed to interrogate these data bases and to provide one or more of the following products:

1. Identification and analysis of the science content of extramural NCI funded research projects in relation to NCPP scientific recommendations.

2. Identification and analysis of the science content of these projects in relation to fields of cancer research or control.

3. Analysis of the science coverage of NCPP recommendations in fields of research or control in cancer.

B. A report was completed for FY '78 NCI-supported projects covering a variety of topics in cancer research. This was distributed to intra- and extramural science administrators, advisors to the NCP-NCI and program leaders in the field of cancer as an addendum to the FY '77 SCAN analysis.

C. Analysis of FY '79 projects was completed and the data tabulated using a format comparable to that used for previous fiscal years.

D. Analysis of FY '80 NCI supported grants and contracts is in progress.

E. Reports have been prepared on specialized areas of research and others are in progress or are planned, e.g., interferon, clinical treatment, toxicology, chemoprevention, nutrition and carcinogenesis. A paper on the "Analysis of Projects in Head and Neck Cancer supported by National Cancer Institute" (in FY '78) was presented at the IV Asian Cancer Congress held in Bombay, India, December 4-8, 1979. The paper will be published in the Proceedings of the Conference on "Head and Neck Cancer."

F. Executive Secretary and analytical support was provided by PAFB staff to the NCI Chemoprevention Coordinating Group, an ad hoc advisory group to the Director, NCI.

G. PAFB staff provided support to the Director, NCI, and the operating divisions in preparing a report on NCI supported activities and funding in prevention for FY '79. This provided an input to Congressional hearings.

H. PAFB staff provided technical, logistic and scientific support to the Low-Level Radiation Research Planning Group, which is temporarily sharing space in OPPA.

PLANNING

Since its creation in 1965, the ODPPA has been primarily responsible for the development and application of systems planning techniques to cancer research and control activities; providing direct support for National Cancer Program planning, department level planning, and individual program planning. The Office also provides general planning consultation services to various program areas within the National Cancer Institute and other institutions and groups participating in the National Cancer Program. In carrying out these responsibilities, staff participates as members of planning teams organized to develop individual program plans, works directly with program and administrative personnel in the development of operational plans; maintains liaison with program personnel; provides periodic consultation and direct efforts, as requested by program leaders, to revise and update both program and operating plans; provides education and training to

program staff in the use of systems techniques; and works closely with the financial management staff during the budget preparation cycle to correlate budget preparation with existing plans.

Specific planning activities engaged in during the past year are described in the paragraphs that follow:

A. Coordinated the preparation of the National Cancer Program 1979 Director's Report and Annual Plan for FY 1981-1985 for submission to the President and Congress as required by law. In previous years, the Director's Report was prepared by the Office of Cancer Communications (OCC) and the Annual Plan was prepared by ODPPA. These two reports were then reviewed and submitted separately to the President and the Congress. This year, the Secretary (HHS) asked that these reports be combined to provide a more contiguous review of program achievement and plans in one document, and also to achieve economies in both time and effort resulting from simultaneous rather than separate review. The combined report describes program progress during the previous year, current activities in each major program, and planned efforts for the 5 year planning period, including budget projections. After extensive internal and external review (NCAB, NIH, OMB, OASH, etc.) and consideration of review comments, the Report is submitted to the Secretary for her transmittal to the President and the Congress and distribution to research and educational institutions, voluntary organizations and Federal, State, and local agencies involved in cancer-related activities. After consideration of reviewers' comments on the 1979 Director's Report/Annual Plan and in an effort to improve the 1980 Director's Report/Annual Plan, it was decided that all NCI activities should be described in the context of four major areas: 1) Cause and Prevention, 2) Detection and Diagnosis, 3) Treatment, Rehabilitation, and Continuing Care, and 4) Cancer Biology. This format is significantly different than that used in previous years. ODPPA staff have begun to prepare the 1980 Director's Report/Annual Plan in this format.

B. Coordinated the preparation of the NCI submission to the NIH Forward Plan and the associated activities of: preparation for NCI participation in Director's (NIH) Forward Planning Review Session, including preparation of a briefing book for NCI Director and staff, and development of agenda items; and coordinating and reporting NCI activity action items which resulted from review session discussions.

C. Coordinated NCI evaluation activities in general and developed further NCI's evaluation strategy including the program performance indicators requested by the Department. Assistance was provided to NCI staff in the development, implementation, and administration of 1% set-aside evaluation projects.

The NCI Evaluation Plan was prepared which describes total NCI evaluative efforts (set-aside and non set-aside); material was prepared for NCI participation in Evaluation Plan review sessions at OD, NIH and Departmental levels.

The Office has the responsibility for coordinating and reporting any NCI activity action items which result from review session discussions.

D. Provided support for Frederick Cancer Research Center space management activities.

E. Provided assistance to the Smoking and Health Program; a staff member serves as the Executive Secretary.

F. Participated in development of a plan for the Division of Cancer Cause and Prevention.

G. Provided planning assistance to the Personnel Management Branch.

H. Coordinated NCI's contributions to the PHS and DCRT ADP plans.

MANAGEMENT INFORMATION SYSTEM (MIS)

The National Cancer Institute's Management Information System is composed of a network of user oriented and managed systems which are designed and developed at the request of and with requirements supplied by the operating areas. In general these systems support individual operating areas but are so designed that the information from several of these systems may be combined to provide a more unified picture of NCI activities than provided by a single system. Development and maintenance of software, operating procedures, and documentation for all of these systems; user training and problem resolution; and coordination of all program and data file changes are provided by the MIS Project Office.

Components developed to date support the Financial Management Branch, the Research Contracts Branch, the Administrative Services Branch, the Personnel Management Branch, and the Office of Program Planning and Analysis within the Office of the Director, as well as several Divisional Information Systems (DIS), the Financial Data Reporting System (FDRS), software interfaces and other specialized procedures for the divisions. The only MIS components for which the maintenance has been assumed by the user areas are the Divisional Information Systems, the Contracts Management System, and one version of the FDRS. However, the MIS Project Office continues to provide consultation on the use and modification of these systems, obtains periodic software and documentation updates from the system managers and is prepared to install them in other operating areas upon request.

A. To effect technology transfer, the staff of the MIS Project Office has provided MIS programs and documentation to representatives from other components of NIH and HHS; specifically,

1. to the Division of Management Policy, a program which produces status reports of personnel actions.

2. to the Office of Human Development Services, a system which supports the data gathering, retention, and reporting required to forecast the disbursement for personal services for the current fiscal year.

3. to the National Institutes of General Medical Sciences, a system which combines obligation and commitment data from the Central Accounting System with ceilings developed by the Institute and provides reports at varying levels of summarization.

B. As the number of MIS systems increases less time is available for implementation of new requests so that the operational state of current systems can be maintained. All system modifications implemented through the MIS Project Office are reviewed to ensure that the proposed change is an accurate and appropriate solution to the problem or requirement; to establish the priority of the work; to determine the impact of the change on the system, on its users and on interfacing systems; to compare the expected benefits with the cost of implementation; and to determine whether the proposed change is compatible with the long-range plans of the MIS. Program modifications are then implemented and independently tested; documentation is updated; and users are retrained whenever necessary. Resolution of operational problems is provided to users upon request.

Maintenance and operational support include the following typical activities:

1. Three operational systems and two systems in development were converted to Version 5 of TPL, a software capability used for the generation and output of tables. Other planned changes at DCRT were reviewed as announced and required changes scheduled.

2. Liaison with central NIH systems was maintained to ensure that modifications in the data sources were incorporated into the MIS.

3. All background information, system documentation, user contacts, discussions and documentation of MIS procedures, and other materials to assist in the audit of the FDRS were provided to the Systems Approval, Review and Coordination Branch (SARC), OA M, NIH. The MIS Project Office volunteered to make this system available to SARC as an on-the-job training exercise and test of SARC audit procedures.

4. Support of the NCI Contracts Management System (CMS) was continued thru the assignment of a member of the MIS Project Office Staff to technical management of the system and responsibility for daily operations. Special budget analysis support was provided for a major extramural contract program review. Several modifications to the CMS/FPLS Interface were implemented to improve the data being reported, as well as to simplify the monthly reconciliation process. Procurement of a competitive renewal contract for operation and maintenance of the CMS for the next three years was carried out.

C. MIS activities initiated during the year include:

1. Development of the procedures for the initial data collection from the Frederick Cancer Research Center and data editing. This data will be used to generate the update transactions for the NIH Space Management System as well as to supply data at a more detailed level for NCI planning activities.

2. Modification and installation of FDRS, a system which had been used exclusively at the division level in NCI, for use by the Financial Management Branch, to assist in the monitoring of intramural obligations by object class for the entire Institute.

D. The MIS Project Office also provides technical support for specific ADP applications in other areas of the Institute and coordination of several NCI-wide activities. Included in this category are:

1. Development of detailed written procedures, including check lists, for the preparation of the quarterly update to the PHS ADP Inventory Data Base. Specific written procedures for the preparation of the annual ADP Financial Plan submitted to DCRT were also produced.

2. A review was conducted of all technical aspects of the SCAN computer system, assistance was provided in the training of the new contractor and general consultation was provided to the Program Analysis and Formulation Branch during the transition period between operational support contractors.

3. With the assignment of the responsibility for coordinating Institute wide ADP security, the MIS Project Office initiated the development of an up-to-date inventory of all NCI ADP resources. As this inventory is compiled, checks of each of these resources for compliance with the department's guidelines must begin, and a plan for improved compliance developed.

E. Future activities of the MIS Project Office will be directed primarily to:

1. Maintain the current status of operational MIS systems; to provide enhancements to these systems and respond to new requests; and to coordinate the design, development, maintenance, documentation, and user training of all MIS systems through configuration management.

2. To coordinate ADP reporting for NCI to the PHS Inventory, the ADP Financial Plan, and the ADP Systems Security Plan.

3. To provide technical assistance requested by other branches within the Office of the Director, NCI, and the divisions.

MIS Project Office staff was assisted by a programming support contract with System Sciences, Inc.; major activities of this contractor are reported in the contract narrative.

CONTRACT NARRATIVE
OFFICE OF THE DIRECTOR FOR PROGRAM
PLANNING AND ANALYSIS, NCI
FY 1980

CONTRACTOR: ORI, Incorporated (Contract #NOI-CO-95427)

TITLE: National Cancer Science Content Analysis System (SCAN)

CONTRACTOR'S PROJECT DIRECTOR: Mr. Norman Shusterman

PROJECT OFFICER: Dr. Michael Klein

OBJECTIVE: To maintain an updated data base for each fiscal year on NCI supported projects and to relate these to the scientific recommendations of the National Cancer Program Plan; to enhance system capabilities in light of new requirements; to provide tabular data on the relationship of the NCI projects to the Plan and to different aspects of cancer research; to provide an ad hoc query capability.

MAJOR ACCOMPLISHMENTS: Enhancements have been incorporated in the analytical methodology and entered into the computerized system. From information provided by PAFB/OPPA, a data base was created for FY '79 covering NCI grants and contracts relating these to the NCPP and to fields of research in cancer.

The system was run to provide the specific reports for the NCI staff, and a number of ad hoc queries were processed.

The system design, program and operation were fully documented.

SIGNIFICANCE TO THE NATIONAL CANCER PROGRAM: The analytical products will provide NCI with an objective measure of the coverage of the NCPP by NCI funded activities. The Plan and NCI supported activities can then be interrelated. Specific questions about the NCPP and NCI activities can be answered from the data base.

PROPOSED COURSE: To prepare an FY '80 update of SCAN based on NCI supported grants and contracts active in FY '80. To continue to improve the System's analytical capability.

DATE CONTRACT INITIATED: May 1979

CURRENT CONTRACT LEVEL: $135,689

CONTRACT NARRATIVE
OFFICE OF THE DIRECTOR FOR PROGRAM
PLANNING AND ANALYSIS, NCI
FY 1980

CONTRACTOR: System Sciences, Inc. (Contract #NOI-CO-95460)

TITLE: NCP Management Information System Support Services (Programming)

CONTRACTOR'S PROJECT DIRECTOR: Mr. Christopher Gordon

PROJECT OFFICER: Mrs. Betty Ann Sullivan

OBJECTIVE: To provide maintenance support which includes modification of computer programs, testing, installation, user training and documentation updates for software and/or procedural changes approved by the MIS Configurations Control Board; operational support which is used primarily to initialize systems at the start of a new fiscal year and to operate test or prototype systems prior to release to the user; and implementation support which provides software and related documentation based on specifications prepared by the MIS Project Office.

MAJOR ACCOMPLISHMENTS: Maintenance activities included report format changes in the Operating Budget Subsystem to permit the processing of NCI's first billion dollar budget; enhanced reporting of travel obligations for the Office of the Director, NCI; installation of a modified version of the Personal Services Forecasting Subsystem; implementation and installation of a Financial Data Report Subsystem (FDRS) to aid FMB in the monitoring of intramural obligations by object class code; enhancement of the Financial Planning Subsystem to accept new object class codes for Control and a new program structure code for the National Toxicology Program.

Operational support included the FY '80 initialization of the FDRS for the Office of the Director, NCI, and conversion to Version 5 of TPL for 5 versions of the FDRS.

Development activities included edit programs and specified queries for the NCI Space Management System as well as a program to generate the update transactions for the NIH Space Management System. A major revision of the NCI's FDRS was implemented for the National Institutes of General Medical Sciences. The FDRS was expanded to allow NIGMS to use the system to report on both intramural and extramural obligations and commitments and to report some object classes by groups of subobject class codes.

SIGNIFICANCE TO THE NATIONAL CANCER PROGRAM: The National Cancer Act of 1971 provides for improved information systems. This contract gives NCI the programming support required to maintain the operational portions of its Management Information Systems and to implement new components.

PROPOSED COURSE: To continue the current pattern of maintenance, operational support and development activities for the two remaining years of the contract.

DATE CONTRACT INITIATED: September 24, 1979

TOTAL VALUE OF CONTRACT: $499,679

CONTRACT NARRATIVE
OFFICE OF THE DIRECTOR FOR PROGRAM
PLANNING AND ANALYSIS, NCI
FY 1980

CONTRACTOR: JRB Associates (Contract # NIH-NOl-CO-75390)

TITLE: Planning and Support Services for the National Cancer Program

CONTRACTOR'S PROJECT DIRECTOR: Mr. Charles Fricker

PROJECT OFFICER: Barbara R. Murray

OBJECTIVE: Provide the support services necessary to assist the Office of the Director, NCI, in meeting the expanded responsibilities established by the National Cancer Act of 1971 and subsequent amendments.

MAJOR ACCOMPLISHMENTS: The activities included support services for program planning, the preparation of briefing and presentation materials, administrative and logistical support to the Office of the Director for planning conferences and meetings, and assistance in the preparation of draft documents required to develop the National Cancer Annual Plan.

SIGNIFICANCE TO THE NATIONAL CANCER PROGRAM: The expanded scope and responsibilities of the National Cancer Program have imposed additional requirements for reporting, planning and analyzing alternative courses of action. This contract provides assistance in areas which could not be done in NCI.

DATE CONTRACT INITIATED: September 30, 1977.

CURRENT CONTRACT LEVEL: $3,403,104 of which $2,879,512 has been obligated. The contract has been extended through September 1981.

OFFICE OF CANCER COMMUNICATIONS

OFFICE OF THE DIRECTOR

NATIONAL CANCER INSTITUTE

PROGRAM ACTIVITIES REPORT, OCTOBER 1, 1979--SEPTEMBER 30, 1980

The National Cancer Act Amendments of 1974 require that the "Director of the National Cancer Institute shall provide and contract for a program to disseminate and interpret on a current basis for practitioners and other health professionals, scientists and the general public, scientific and other information respecting cause, prevention, diagnosis and treament of cancer."

A. NCI disseminates information in three categories:

1. Scientific information used and produced by investigators.
2. State of the art information for use of health professionals and the public.
3. Administrative and program information used by NCI and other organizations within the National Cancer Program.

B. The Office of Cancer Communications (OCC) is a major source of information for the public (including cancer patients and people at risk of developing cancer) and a substantial source for health professionals. It carries out traditional communications support activities for NCI. Within the National Cancer Program it assumes the role of coordinator of cancer communications, and develops new initiatives to help meet responsibilities stemming from the Act, to provide the public and health professionals with useful information about cancer.

OCC's traditional activities include responding to press inquiries; preparing news releases, press summaries, announcements, and background statements for use by the press; and operating press rooms at major NCI-supported scientific meetings. The OCC develops reports and publications, speeches and Congressional testimony, reports required by law, special reports for the byline of NCI's Director, and a wide variety of publications for public and professional audiences.

The OCC develops exhibits aimed primarily at health professionals and scientists. They are used at scientific and professional meetings each year, and provide audiences with information on cancer and how to tap resources available through NCI and other organizations.

The offfice also responds to public inquiries: those requiring both customized and non-customized written responses, and controlled and Congressional inquiries. The office distributes publications, and replies to inquiries by regular telephone and to a special toll-free number. It provides backup service to 19 Cancer Information Services (toll-free inquiry systems) which received last year more than 150,000 calls. Seventy-five percent of these CIS inquiries are from patients, or their relatives or friends.

OCC maintains awareness of communications activities of all participants of the National Cancer Program, assuring that there is a minimum of unneeded duplication, and identifying and filling gaps in communications programming.

The OCC operates a national Cancer Information Clearinghouse that maintains awareness of cancer-related informational and educational materials and services produced or used by the cancer community. The Clearinghouse responds to requests for information about available informational and educational materials and services, promotes the use of existing informational and educational materials and services, and identifies areas where needed materials and services do not exist.

OCC's approach to information dissemination is to reach out to target audiences through intermediary groups which have best access to the chosen audiences. The types of intermediary organizations with which OCC is involved are: cancer related (cancer centers, cancer societies); non-cancer related (fraternal organizations, medical societies, community groups, etc.); and the mass media. Organized dissemination projects are under way in the areas of smoking information, breast cancer information, and coping with cancer. An organized dissemination project is planned in the area of environmental carcinogens. Other areas of special emphasis are: 1.) pretesting and evaluation of all communications projects; 2.) communication with minority audiences; 3.) an internship program for graduate students in journalism, communications, etc.; and 4.) support for 19 Cancer Information Service offices operated by Comprehensive Cancer Centers.

HEALTH COMMUNICATIONS INTERNSHIP PROGRAM

As part of the development of needed communications resources, OCC sponsors a six-month graduate internship in health communications. Outstanding graduate students are selected for varied communications appointments involving science-writing, information sciences and health education programs. Interns are assigned to work with professional staff and are given writing, editing and other technical tasks. Interns are encouraged to participate in a specially-designed seminar series and to develop special projects during their term.

The 1980 internship program included a number of seminars presented by noted NCI staff and other Washington experts in research, communications and government-sponsored health programs.

INFORMATION RESOURCES BRANCH

This Branch, one of three OCC line operations, was created by OCC reorganization in 1977. The Branch supports the National Cancer Program by planning, initiating, developing and maintaining information resources. Information resources are services or products used in support of the direct communications efforts. For example, the Document Reference Section develops literature searches and provides reference services for public, Congressional and press inquiries, as well as assisting with project development (i.e., health information projects involving coping, breast cancer education, smoking education, etc.)

The Graphics and Audiovisuals Section is a central support resource to the NCI in developing graphic arts, printing, exhibits, specialized communications, inter/intra-agency publication clearance, special events, meetings and conference assistance.

E. Joseph Bangiolo became the first Chief of the Information Resources Branch on May 4, 1980. Mrs. Celina Wood serves as Branch secretary and Purchasing staff.

Cancer Information Clearinghouse

The Cancer Information Clearinghouse, a major communication resource of NCI, is a unique service of OCC with nationwide scope. The Clearinghouse collects public/professional educational materials used by health agencies and the private sector. The Clearinghouse has capability for storage/retrieval of bibliographic data on materials. As of the end of 1980, the Clearinghouse collection totals 7,000 documents: reports, audio/visuals, educational articles, information packages. These are organized in the collection by user-group (public audiences, professionals), by format (audio/visuals, posters, brochures, etc.) and by topic or subject matter (Spanish Language Materials, Breast Cancer, Coping, etc.) The computerized information base of the Clearinghouse is accessible using "free-text" vocabulary (any content term) or controlled vocabulary.

The Clearinghouse serves thousands of audiences and named user-groups such as cancer centers, health departments, voluntary societies, hospitals and clinics. During 1980, the Clearinghouse performed 2500 searches of the collection in responding to health professionals' requests for specific topical information.

The Clearinghouse develops and distributes a variety of special bibliographies and information packages. During the year the Clearinghouse organized and compiled 12 major information packages in support of the 21 regional communications offices. These packages contained reference materials, new publications, educational articles, technical reports and other information of continuing value. Each package has an annotated bibliography which cites the sources of material (for availability). The bibliographies are circulated to an additional 300 users upon request across the country.

Additionally, the Clearinghouse performs a variety of other information tasks including creating current awareness or special announcements of new publications, helping in program coordination and assisting in locating information resources (i.e., other Clearinghouse efforts) etc.

During 1980, the Clearinghouse developed six new topical bibliographies covering areas such as patient education, public education programs, patient rights, cancer treatment, screening/diagnosis (primarily for professionals) and materials for the general public.

E. Joseph Bangiolo is the Project Officer on this project. The contractor is CSR, Inc., of Washington, D.C.

Communications Internships

The NCI Communications Internships have been on-going since 1976. This program brings outstanding graduate students in biomedical communications, journalism, information sciences, health planning and allied fields. Fifty-four individuals each have spent six months engaged in working with NCI communications programs. During 1980, twelve interns were selected and served in a variety of capacities including public information specialists, health planners, science writers and technical information specialists.

During the January-July 1980 internship, the following individuals were interns:

- Pennie Billings, with a Masters in Library Science from the University of Texas (Austin), was assigned to the OCC's Document Reference Section.
- Kathyrn Braun, University of Hawaii, worked in the Public Inquiries Section as an Information Specialist.
- Nancy B. Carothers, a candidate for the Masters Degree in Journalism, University of Georgia, also served in the Public Inquiries Section.
- Christopher F. Dippel, University of Kansas, worked as a science writer in the Reports Section.
- Wendy Schubert, Johns Hopkins School of Public Health, interned with the Information Projects Branch.
- David Pacholczyk, Marquette University, worked as a health planner in the Office of Program Planning and Analysis.

From July-December 1980, the following persons participated in the internship program:

- Marlene Bobka, a graduate student from the State University of New York (Albany) served in the Document Reference Section.
- James Bromley, University of Texas (Houston) interned with the Information Projects Branch.
- Julia Goplerud, a graduate student from the University of Kansas (Lawrence), was assigned as a science writer in the Reports Section.
- Katherine Kane, Queens College, New York, served as a Public Information Specialist in the Public Inquiries Section.
- Ann Mahony, a graduate student from the University of California, Los Angeles, interned with the Information Projects Branch.

- Susan Sare, a graduate of the University of Oregon's Journalism School, worked in the Public Inquiries Section.

Document Reference Section

FY 1980 is the first, full year of operation for the reorganized Document Reference Section. Several major changes in the DRS have been accomplished during the year: access to additional on-line systems, membership in the U.S. Library of Congress Network (FEDLINK), cataloging of the ready-reference collection, organization of the journals collection, enhanced coordination with the Cancer Information Clearinghouse, creation of an efficient on-line information base of the bibliographic collection and re-staffing of the Section (due to personnel leaving for promotions).

The DRS is a central resource to the Office of Cancer Communications and the Institute. Materials with enduring value are collected, indexed and made accessible for specific users. Included in this user group is the NIH scientific community as well as professionals working in public-information areas.

A principal resource of the DRS is the in-house bibliographic file of public/press inquiries, news clips, technical reports, scientific articles and other reference materials. The collection totals 30,000 records and continues to grow at a significant rate. The collection is maintained in hard copy and microfilm. Surrogate documentation is available on-line and is specifically searchable by author, title and subject.

The DRS now has access to major commercial and government-sponsored health-relevant on-line files such as those of the National Library of Medicine (MEDLINE, CANCERLINE, etc.), NTIS, EPA and public files of vendors including SDC, BRS and Lockheed-Dialog. These capabilities make possible rapid searches for information which may involve complex, technical responses, browsing of the literature or location of a single, specific citation. Access to journalistic files such as the New York Times Information Bank, NEWSEARCH, Magazine Index and others allows the DRS to support the Institute with data especially useful in public information work.

The DRS performs thousands of searches annually, assisting public information specialists, health communicators, and scientist-administrators to be appropriately responsive in answering inquiries or developing information programs.

Significant staff changes have occurred during the year. Patti Dickinson, formerly Non-Print Media Librarian in the NIH Library, became Chief, Document Reference Section in May 1980. Ms. Dickinson joined the staff as Chief, Technical Information Specialist in January. E. Joseph Bangiolo served as Acting Chief from July 1979 thru April 1980.

Joyce Williams, Technical Information Specialist, left the staff in December 1979 to assume a position with the U.S. Environmental Protection Agency in the pesticides information center.

Melissa L. Yorks, formerly an information sciences intern in the Section, accepted a full-time temporary position in the Section where she served until June 1980. Ms. Yorks left the staff, joining the Index Section of the National Library of Medicine.

In January 1980, Ms. Pennie Billings, a graduate of the University of Texas (Austin), was assigned to the DRS as a communications intern in information sciences. Ms. Billings served as a technical information specialist with particular emphasis on collection control and document management. She completed her internship with distinction and returned to Texas where she will work in a medical library.

Ms. Karen Schlick, working on a part-time, temporary basis, became an information assistant in November 1979.

Mary Lawless has been a summer employee in the DRS for several years. In the summer of 1980 Ms. Lawless became a reference assistant. She also served as a replacement for Mrs. Wood, Secretary for Information Resources Branch, who went on Maternity Leave in July.

Graphics and Audiovisuals Section

Over 500 requests under the Freedom of Information Act were received and processed during the year.

NCI's Special Communication is a service provided by the Section that allows NCP information to be disseminated rapidly, as well as accurately. The Special Communication can be sent selectively to medical and voluntary groups, professional societies, health professionals and persons in allied health professions, based on the specialized nature of the information or more general discussions of new programs or research advances. During FY 1980, over a million individuals and groups were reached via 25 Special Communications.

Over 6 million publications were distributed for NCI by Supermarket Communication Systems, Inc., in bulletin board distribution facilities located in 4,800 supermarkets and discount stores throughout the U.S. The Consumer Information Distribution Center in Pueblo, Colorado, distributed approximately 350,000 copies of new NCI publications.

Three new table-top exhibits were prepared to supplement existing large exhibits for special interest groups. Approximately 12 new panels were prepared for the large exhibits to allow promotion of special programs. An exhibit of NCI information materials was prepared for "Cancer Day" which was attended by summer interns and stay-in-school employees. Exhibits were shown at 24 professional meetings. Printed materials (approximately 180,000) were distributed at those meetings. Slides were produced on the NCI and NCP for use by the professional staff.

The NCI film, "Research to Prevent Cancer", continued to be in demand. There were approximately 10,000 bookings with an audience of 8 million.

Approximately 240 nonresearch materials including publications, audiovisuals and speeches were processed for official clearance. Assistance was provided to all NCI offices in obtaining printing and audiovisual services.

Tours and cancer programs requested by outside groups such as science students and civic groups were arranged at the rate of approximately one per month.

A daily newspaper clipping service of items of NCI interest was provided to the professional staff, CIS offices and the President's Cancer Panel.

The Fourth Wednesday Forum, a monthly seminar series designed to keep NCI staff abreast of current topics relating to cancer, presented six programs for NIH staff and other interested persons. Presentations were made by NCI staff members, employees of the other government agencies and members of the private sector medical field.

The Section has five staff members. In February, Pauline Wall retired as Section Chief, and was replaced by Margaret Layton, initially as Acting Chief and later as Chief. Arlene Soodak was appointed to replace Ms. Layton as Visual Information Specialist. Carolann Hooton, Public Information Specialist, transferred to another position in the Food and Drug Administration and was replaced in the post by Maralyn Farber. Edith Gaub, Information Assistant, and Beverly Gamble, Secretary, also serve in the Section staff.

INFORMATION PROJECTS BRANCH

Smoking Education Programs

The Information Projects Branch (IPB) is engaged in a number of projects intended to help smokers who want to quit, either directly or through health professionals; assist school officials and others interested in education to develop smoking cessation programs for youth; develop approaches to utilize the workplace and education materials aimed at high-risk minority audiences; and stimulate smoking-related efforts through the print and audiovisual media. These activities are being developed and implemented in cooperation with other public and private health organizations so that these smoking programs will contribute to an overall coordinated effort.

The following projects are under way:

I. Health Professionals

1. "Helping Smokers Quit" Kit. Intended for use by a physician with his/her patients who want to quit smoking, the kit has been prepared and distributed to more than 90,000 physicians. The availability of the kit was announced through a mass mailing of a promotional flyer, presentation at several medical conventions, and

print ad and editorial coverage in numerous medical newsletters. In addition special mailings were undertaken with many public and private health agencies.

A field evaluation of the kit is under way in two communities. Results of this evaluation and others will be used in future modifications of the kit.

2. "Everyone Can So Something About Smoking" program kit. Developed with the American Academy of Family Physicians and the American Lung Association, this contains a slide-tape show designed for presentation by a physician and voluntary health organization to dispel the myth that efforts to curtail smoking have been fruitless and to stimulate new community activities related to smoking.

3. Program for/with nurses. Collaboration with the Nurses Association of the American College of Obstetricians and Gynecologists (NAACOG) and the National Interagency Council on Smoking and Health has helped to collect information from nurses about their smoking attitudes and behavior, and about programs which currently exist for smoking nurses who want to quit, and for nurses to help smoking patients.

4. "Let's Help Smokers Quit" Kit. This kit was designed by the American Dental Association and IPB for used by dental professionals (dentists, hygienists, and assistants) with patients who want to quit smoking. The kit is an adaption of the "Helping Smokers Quit" kit developed for physicians. The focus of this program is oral health care, effects of smoking on peridontal disease, and smoking's cosmetic effects.

II. Youth

1. Smoking Programs for Youth. To fill a gap in the existing literature on smoking education for young people, IPB has prepared this comprehensive state-of-the-art report. An offshoot of The Smoking Digest, this booklet discusses the issues related to adolescent smoking, and summarizes policies, curricula, and counseling programs related to smoking prevention/cessation in primary and secondary schools.

2. Smoking and Health Bibliography. Approximately 10,000 copies of this listing of available print and audiovisual smoking education materials have been distributed. A school edition has been prepared by the Cancer Information Clearinghouse and will be distributed to over 150,000 elementary and high school principals, school and public libraries nationwide.

III. Smoking and the Workplace

1. IPB has worked with the National Interagency Council on Smoking and Health (NICSH) to collect information on existing smoking policies and programs in 3000 American corporations. A survey of the Fortune "Double 500" corporations (top 1,000 companies), medium-sized companies (500-2200 employees) and 1,000 small companies (50-499 employees) was conducted by NICSH, with support from OCC. Results indicated that 15 percent of U.S. businesses have programs to encourage and assist employees to quit smoking. One-third of responding companies expressed an interest in developing and expanding smoking cessation programs. This information will be compiled into a report of the current state of affairs vis-a-vis smoking programs in the workplace. This report will be useful to NICSH members and other public and private health agencies with an interest in developing workplace-based programs. This information will be used in the development of a guidebook, "How to Start Smoking Programs in Your Company."

2. In addition to developing materials of interest to management, IPB is working with the AFL-CIO and member unions to develop smoking programs of benefit to union members. Labor input will be sought for all program plans, and information programs utilizing union communication channels are planned.

3. As an extension of its workplace program, IPB is currently working with the U.S. Department of the Navy on the development and coordination of a Navy-wide smoking program. Entitled the "Navy 'Clearing the Air' Program" (NaCAP), this program will reach all Navy personnel, including enlistees, officers, health professionals, dependents, and retirees, with smoking information and cessation assistance. IPB will also assist the Navy in the production of television and radio spots targeted at 17-25 year-old men, a group which is known to have a high rate of smoking. The NaCAP can serve as a model for future workplace-based and other comprehensive smoking programs.

IV. Minorities

As a result of the Office of Smoking and Health's recent Planning Conference on Smoking and Health in Minority Communities, IPB plans to initiate the following activities:

1. Promotion of the "Helping Smokers Quit" Kit to minority physicians.

2. Promotion of "Clearing the Air" and The Smoking Digest. NCI's "Clearing the Air" is a compilation of methods and techniques for giving up cigarettes. IPB will actively promote its availability in lay and professional publications with Hispanic and Black readership. In addition, the booklet will be translated into Spanish, with appropriate adjustments in format and graphic design.

V. Media

One of OCC's primary functions is to serve as a resource to the nation's press in providing information about all phases of cancer prevention, detection, and treatment. Included in this function is the provision of information on smoking and health.

1. "Clearing the Air" promotion. IPB has undertaken an availability notification of "Clearing the Air" through the popular press to the general public. This notification has included placement with the Consumer Information Clearinghouse, which has made separate availability notices regarding the pamphlet through the press; and an availability notice in the "Dear Abby" column in May 1980.

2. Development of a "Progress" Smoking Poster. OCC is currently developing a poster designed to communicate the progress being made by smokers in kicking the habit. Two versions of this poster, in rough-produced form, will be tested via the print mechanism of the Health Message Testing Service.

Breast Cancer Education Program

The primary goal of the breast cancer program is to heighten public awareness and understanding of the overall progress against breast cancer in order to change attitudes and predispositions about the disease; increase public detection practices; and to improve a woman's ability to cope with the medical and psychological aspects of breast cancer once a symptom is discovered.

The program materials and projects communicate that there is progress being made against breast cancer because detection practices are effective, treatment of breast cancer by combined modalities is reducing recurrence of the disease, and that rehabilitation of breast cancer patients allows women to continue leading active lives after treatment. The program emphasizes that women can take advantage of this progress against breast cancer by learning and practicing breast self-examination, requesting breast palpation as part of the regular physician/clinical exam, and by making informed decisions about treatment.

This year's program materials offer a variety of printed and audiovisual materials:

1. The Breast Cancer Digest, A Guide to Medical Care, Emotional Support, Information Programs and Resources, was developed for health professionals, educators, and the media. The Digest covers the medical, psychosocial and educational aspects of the disease including: detection, diagnosis, treatment, rehabilitation, and reconstructions.

2. Progress Against Breast Cancer was designed for use by business, service clubs, religious organizations, unions, and other interested groups. The educational package includes: a 17-minute slide-tape program which provides an overview of progress being made and what people can do to take advantage of it; a take-home pamphlet for every

member of the audience which summarizes the information contained in the slide-tape presentation and sources of additional information; a poster which can be used to advertise the program and reinforce its message; an article describing the program for use in organizational newsletters; a User's Guide to help persons organizing the program. The program is suitable for use among both women and men and is available in versions for general, Black and Spanish-speaking audiences.

3. Breast Cancer: An Annotated Bibliography of Information and Educational Materials was compiled by the Cancer Information Clearinghouse. This bibliography lists public and patient materials available from a variety of sources.

4. Breast Self-Examination is a pamphlet which provides step-by-step instructions on how to examine the breasts for signs of cancer. The pamphlet is also available in Spanish.

5. What You Need to Know About Cancer of the Breast is a pamphlet designed for breast cancer patients and discusses symptoms, diagnosis, rehabilitation, emotional issues and questions to ask the doctor.

New program activities are also under way, such as the National Survey of Public Knowledge, Attitudes and Practices Related to Breast Cancer, a probability survey among women and their partners with augmented samples of Black and Hispanic women. The study will provide the most extensive information to date on knowledge, attitudes and practices regarding the disease.

Another program concerning BSE is Teaching Breast Self-Examination in Hospitals. This is a new program for hospital-based nurses to help them teach female patients to examine their breasts.

Coping with Cancer

The Coping with Cancer Program was developed to assist patients and their families in learning to live better with cancer by providing them with information on the disease and its treatment. Program materials are designed to assist patients and their families both directly and through those who provide care and support (e.g., medical professionals, health communicators, and teachers). In view of these objectives, publications produced within the program emphasize the following points:

1. A diagnosis of cancer is not a death sentence. More individuals than ever before are living with the disease;

2. Living with cancer creates certain pressures and problems with which patients and their families must cope;

3. There are useful coping skills available from caregivers and from other patients and families that can help those with cancer;

4. Although problems in coping with cancer are not unique, the applicability of a particular coping approach depends on the individual patient and his circumstances.

Information pertaining to these four message areas will be communicated through seven project elements. Each will be developed in cooperation with consumer representatives (i.e., the ultimate recipients of the material) and professional organizations, and distributed through appropriate patient-related and professional organizations. The planned elements are:

1. Synthesis of available information on the psychosocial aspects of cancer.

   Coping with Cancer, a summary of information and suggestions for assisting patients and families cope with the disease, is directed to cancer-related communicators, planners, and direct caregivers to provide a context for and complement to patient materials.

2. Materials for cancer patients and their families.

   The different medical and psychological situations of cancer patients of various ages indicate a need for materials addressed to four separate audiences: adult patients and family members, child patients, adolescent patients, and parents of young patients. OCC is creating and/or reproducing a number of materials. These publications include booklets to help patients deal with eating problems accompanying chemotherapy or radiation therapy, and guides for patients which explain the side effects and procedures of cancer treatment. New booklets directed towards adolescents and parents of young cancer patients also are among the resources currently available. The special problems of families adjusting to the stresses of coping with cancer are addressed in a booklet entitled Taking Time - Support for People with Cancer and the People Who Care About Them.

3. Materials for health professionals and non-health professionals.

   Some health professionals do not specialize in the care of cancer patients and yet have an impact on how patients cope during the course of the disease. As a result, OCC is pursuing how best to meet the psychosocial information needs of several groups of these caregivers. New publications produced include an annotated bibliography of patient and professional education materials, and Students with Cancer: A Resource for the Educator.

4. Article preparation and placement in consumer publications

   The popular press can be an important source of information for patients, their families, and members of the community. Selected magazines will be contacted to ascertain their interest in pursuing the general subject, and the appropriate assistance provided them (e.g., backgrounder, article preparation by OCC, one written by an expert in the field, or one prepared by a staff writer given access to the research gathered thus far in the Coping project).

5. Article preparation and placement in professional publications.

   Information on the issues and techniques relevant to coping with cancer, as delineated by experts in the field and summarized in Coping with Cancer, will be developed and offered for placement in key professional publications. Articles will be tailored to the specific requirements of each journal. One article is scheduled to appear in the Journal of the American Medical Association and in Colloquy.

6. Communications unit for health professionals.

   Another means of promoting patient and family coping behaviors as well as reinforcing materials directed to them will be a unit (medium to be determined) that introduces and explains techniques, options, and resources for patient and family counseling. Communications units using different media developed in a variety of settings are being examined to determine their effectiveness and transferability.

7. Speakers for professional audiences.

   In coordination with the NCI Speakers' Bureau, speakers with expertise in coping techniques will be approached for possible participation in appropriate professional meetings and conventions.

Hard-To-Reach and Minority Project

Another IPB project area is providing minority and "hard-to-reach" populations with appropriate and useful information and education about cancer causes, prevention, detection, diagnosis, treatment, rehabilitation and available sources of cancer care in the community. The target intermediary groups include health-related groups with minority constituencies, non-health related groups serving mainly minority populations, and minority media. A number of such groups have been recruited and are actively engaged in this effort. The objectives of the special audiences program are to:

- Increase realistic awareness of cancer's impact among special (often high-risk) groups.
- Reduce myths and sense of fear or fatalism toward cancer.
- Provide specific information on actions individuals can take to guard against cancer.
- Increase prevention, self-detection and medical consultation practices.

To meet these objectives, the program seeks to:

- Work with existing organizations serving these populations to determine their specific needs and to develop effective approaches to meet these needs.

- Develop partnerships with health-related and other organizations serving these audiences, to disseminate information programs and materials.

Activities for this year include preparing a special-audience bibliography of public and patient education materials on cancer-related topics. Two publications, "What Black Americans Should Know About Cancer," and "Lo Que Usted Saber Sobre El Cancer," ("What You Should Know About Cancer"), a bilingual piece for Hispanic audiences, have been developed expressly for these audiences and are being disseminated widely. "Progress Against Breast Cancer" is an informational and educational program designed for use by business, service clubs, religious organizations, unions and other organizations serving minority audiences. This public education program is available in versions for Black and Hispanic audiences. Publicity includes special communications to select target groups, notices to health-oriented publications, and print ads in major Black and Hispanic publications. Other efforts include placing public service announcements with Black radio networks, distribution of a question-and-answer column in newspapers serving Black audiences; story placement in national minority publications; revision of the Breast Cancer Education Program materials for Black and Hispanic audiences; developing messages aimed at reducing myths and misconceptions about cancer among specific audiences; aiding Cancer Information Service offices in the production of their programs to minority audiences; collecting cancer education materials aimed at specific target audiences; completing a clips analysis of cancer news in Black publications.

New program activities undertaken by IPB have been:

- Cancer Myth Print Public Service Advertisement - a series of print public service ads designed to dispel common myths and misconceptions about cancer and to promote the use of existing programs and services (such as the Cancer Information Service) to these audiences.

- National Survey of Public Knowledge, Attitudes, and Practices Related to Breast Cancer - a national probability survey among women and their partners with augmented samples of Black and Hispanic women. The study will provide the most extensive information regarding public opinion about the disease to date.

- A Content Analysis of major Black newspapers' coverage of cancer.

Pretesting Health Messages Program

Health Message Testing Service:

The Health Message Testing Service (HMST), developed within IPB is beginning its fourth year. To date, approximately 40 radio and television public service announcements (PSA's) have been tested through the service. This year's message sponsors include: The Office of Cancer Communications, NCI; The National High Blood Pressure Education Program, NHLBI; The Pennsylvania Department of Health; M.D. Anderson CIS; The Office of Health Information and Health Promotion; the Florida CIS; The Office on Smoking and Health; the Duke University CIS; and the Pennsylvania Department of Transportation.

In FY 80, NCI, NHLBI, and OHIHP were joined by a fourth sponsor, the Office of Public Affairs (OPA), DHHS. All of the sponsors have received 1% evaluation funds to support the project which will be used in two ways. First, funds will be used to continue the broadcast testing component of HMTS. OPA is currently contracting for testing services with a commercial firm and the Service will continue to be coordinated by OCC. This involvement of OPA will expand HMTS to include testing messages produced by human service agencies within HHS.

The evaluation funding also will be used to continue developing a print testing component of the Service. Over the past year, a working group of experts in the fields of advertising research, communications research, and health education have been convened to make recommendations for the best approaches for testing printed health materials. In determining these approaches, HMTS staff have conducted a needs assessment of over 300 health material producers (including HHS information offices, state and local health departments, and voluntary agencies) to determine which materials are most commonly used and what are the pretesting needs of these organizations. A review of university marketing and communication departments also was conducted to explore the feasibility of using their services for testing health materials. A report on the use of incentives in audience testing also was prepared. As a result of these working group meetings and background research, HMTS staff has initiated a "pilot testing" phase in which recommended methodologies will be used to pretest DHHS materials (particularly posters, brochures, flyers, and print ads.)

Finally, a booklet entitled: The Health Message Testing Service was produced which describes how the Service works and how message producers can use the Service to test their broadcast messages.

Pretesting Activities:

A number of pretests were conducted as part of materials development for the smoking, breast cancer, coping, and special audiences programs. OCC also provided pretesting assistance to the Memorial Sloan-Kettering CIS office in an investigation of underutilization of a breast cancer screening center in Harlem.

The three pretesting booklets developed by OCC (Pretesting in Cancer Communications, Readability Testing in Cancer Communications, and The Health Message Testing Service) have been disseminated widely during this year. A number of professional journals and newsletters have included articles about the pretesting program (including the Canadian Journal of Health Education) which resulted in numerous requests for booklets and pretesting reports. HMTS staff have presented results of HMTS and other pretesting to a variety of interested groups (the HHS information officers meeting, the Baltimore Public Health Department, and the New York City Health Department) at professional conferences (the Consumer Education Fair, Communicating with Mexican American Conference, and the International Communication Association Conference).

Cancer Communications Network

The Centers Outreach Program of the Division of Cancer Control and Rehabilitation (DCCR) has established a Cancer Communications Network through the contract mechanism. This network consists of 22 individual offices located throughout the country. Collectively, their programs are a coordinated network whose efforts are aimed at addressing the public and professional cancer communications needs of the entire country. Separately, they are designed to bring the significant resources within their institutional setting to bear on the specific cancer communications needs within the region they serve. Nineteen of these offices are located within designated Comprehensive Cancer Centers, two are in non-comprehensive settings, and the last program is a national service for those parts of the country not served by the individual network offices and which also acts as a back-up (weekends, evenings, holidays) for them. While each network office has established informational/education program components, the core activity of each has been a toll-free telephone service (Cancer Information Service-CIS) to respond to inquiries from the lay public and professional audiences.

Because of a similarity in activities and skills with the network programs, the Office of Cancer Communications has played a major role in the management and support of the network since its inception in 1975. The Information Projects Branch serves as the designated coordination and liaison point with the Network Project Officer/DCCR. Specifically, the Branch provides support to the Cancer Communications Network in two broad areas:

A. Management Support - Three members of the Branch participate in the NCI Network Management Group which provides input and advice on the program to the Project Officer and the Director, DCCR. This management group met five times during the last year to discuss issues such as: (1) physician referral policies, (2) network evaluation and quality control, (3) future directions, and (4) annual reporting requirements.

   The Branch also actively participated in several Network management activities. These included: (1) organization and coordination of a 15-member Network Evaluation Task Force responsible for national evaluation of the program, (2) organization and logistical support of the annual meeting of Network Office Coordinators and NCI staff,

(3) development of position papers on national evaluation and physician referral, (4) development and distribution of a Network Personnel Directory to facilitate communications and interaction between counterparts in the individual offices, (5) development of the 1979-80 Annual Report Format for the Network Office contracts, and (6) conducting on-site assistance and review visits to 11 of the Network Offices.

B. Technical Advice and Support - The Branch provides direct support to the Network Offices in the area of advice on program and materials development (including pre-testing), publicity and promotion and advance notice of national publications and broadcast programming which cites or promotes the Network and its services. While it is the policy that each Network Office is responsible for promoting its own telephone services, the Branch does produce several promotional items each year which the individual offices can order for their own use. Those items produced during this last year include: (1) three television spots (Breast Self-Examination, Supermarket, and a Generic CIS spot), (2) reproduction and distribution of a locally produced television spot (Florida Puppets), one set of five print ads (Myths and Misconceptions), (3) promoting the availability of several popular promotional pieces from previous years which will be produced again, and (4) the development of a stand-up counter poster for use in distributing publications through pharmacies.

The staff of the Information Projects Branch at the beginning of the year consisted of Elaine Bratic, branch chief; Robert W. Denniston, Barbara D. Blumberg, Bernard H. Ellis, Jr., Rose Mary Romano, and Cheryl Bleiberg, program staff; Dorothy Kipnis, Sylvia Pines, and Nichole Moten, support staff; and intern Wendy Schubert.

By the end of the year, Ms. Bratic had left and was replaced by Mr. Denniston as branch chief. Mr. Ellis left, also. New staff members coming on board were Thomas J. Kean and Carol S. Case, program staff, and My-Hyang Nam, summer student. New interns were Ann Mahony and James Bromley.

REPORTS AND INQUIRIES BRANCH

Public Inquiries Section

Initiatives undertaken by the Office of Cancer Communications to inform and educate the public about cancer, coupled with widespread coverage of cancer news in the national media, had a major impact on the National Cancer Institute's public information program in Fiscal Year 1980. The volume of written and telephone inquiries to the Institute rose over 30 percent during the year, from about 230,000 in FY 1979 to over 300,000 in FY 1980; these figures substantiate the American public's confidence in the National Cancer Institute as a reliable source of cancer information.

The Public Inquiries Section functions, with the assistance of a contractor, Biospherics Incorporated, in five major areas: 1) custom letters, which are individually prepared responses to letters and telephone inquiries from the

public; 2) controlled letters referred by members of Congress, the White House, and other Government offices; 3) noncustom inquiries, which are requests that can be answered by sending publications alone (no letter); 4) WATS-line calls to the Institute's toll-free Cancer Information Service (CIS); and 5) the distribution of publications produced by the NCI, including those sent in response to noncustom inquiries and CIS calls and as enclosures with custom and controlled letters.

A month-by-month analysis of the volume of written and telephone inquiries handled by the contractor, and of publications distributed in FY 1980 is presented in the table on the following page. The analysis shows a 46 percent growth in publications distributed, a 40 percent growth in noncustom requests, and an 11 percent increase in telephone inquiries. Controlled letters remained at about the same level as in FY 1979. The table indicates a decline only in the volume of custom letters. The totals for July, August, and September are projected figures, based on anticipated response to ongoing and planned NCI promotions during the summer.

In addition to the contractor effort, the Public Inquiries Section carried on a major in-house information program. The staff received and responded to more than 17,000 telephone inquiries from the general public, the health professions and various Government agencies dealing with all aspects of cancer research and control, as well as with Institute policy and administrative concerns.

The Section also served as the control point for all Congressional inquiries received by the Institute. In addition to the 379 Congressional letters reported by the contractor (see table) 278 were referred to the operating divisions of the Institute for preparation of replies and return through the Section for processing.

Summary of Informational Activities in Fiscal Year 1980

A key factor in the growth in the information program was the promotion by the OCC of materials in two major areas: smoking and health and breast cancer education.

Institute publications dealing with smoking and health account for almost 80 percent of the projected 22.5 million publications distributed in FY 1980. Included in this distribution are components of two health education kits developed for doctors and dentists: the "Helping Smokers Quit Kit" for physicians and the "Let's Help Smokers Quit Kit" for dentists. The kits represent a major effort by the NCI to assist medical personnel in helping their patients stop smoking. Each kit contains enough material for 50 patients; the physicians' kit includes 157 separate items, and the dental kit has 211 items.

The "Helping Smokers Quit Kit" was first promoted in FY 1979. Reorders for kit components and continued promotion of the kit in the professional media resulted in the distribution of some 7.5 million kit publications between October and June. In a joint effort with the Department of the Navy, the

NCI also is promoting the kit and other smoking cessation pamphlets to Naval personnel. This project is known as NaCAP (Navy Clearing the Air Program).

The "Let's Help Smokers Quit Kit" was announced in a "Special Communication" on June 16, 1980, to dental and allied professionals. By the end of the month, the OCC had received over 18,000 requests for the kit. It is projected that during the last 3 months of the Fiscal Year, some 45,000 dental kits will be distributed, accounting for about 9.5 million publications. This program is being carried out jointly with the American Dental Association, which has developed some of the materials in the kit.

Another smoking cessation pamphlet, Clearing the Air, had the highest single distribution during the year--713,979 through June 30. This pamphlet, which is designed for the general public and contains guidelines for quitting smoking, was widely publicized in the media during the year. The mention of the pamphlet in the "Dear Abby" syndicated column in May and June resulted in 50,350 written requests by the end of the month--the largest single response to a media event in OCC history.

NCI promotion of new publications on breast cancer in the health care community, as well as continued media interest in breast cancer research, resulted in a heavy demand throughout the year for informational materials in this area. As of June 30, NCI materials about breast cancer accounted for over 1 million of the publications distributed.

Two "Special Communications," one issued late in FY 1979 and the other in April 1980, had noteworthy impact. The first announced materials in the Breast Cancer Education Program, including The Breast Cancer Digest and Progress Against Breast Cancer: What You Can Do About It; the second offered Breast Exams: What You Should Know. The response to both "Communications" was heavy. By the end of June, 363,787 items in the Breast Cancer Education Program had been mailed out, including over 170,000 copies of Progress Against Breast Cancer (both general public and Black family focus versions), and almost 79,000 Digests. The April "Communication" generated 8,577 orders for Breast Exams in a 2-month period. About 90 percent of these were bulk orders, and, by the end of June, 335,796 copies of this publication had been distributed.

Other new pamphlets on breast cancer received wide distribution. These included Breast Self-Examination (159,272 copies), which was reprinted during the year; What You Need to Know about Breast Cancer (134,131 copies); and If You've Thought about Breast Cancer (25,652 copies).

Single copies of NCI publications are available in the immediate office of the Section. These are given to "walk-ins" and mailed in response to telephone requests. Approximately 14,500 publications were distributed in this manner in FY 1980.

Several media events contributed to the volume of public inquiries, particularly telephone calls, on breast cancer. In January, Drs. Allen S. Lichter and Ernest V. DeMoss of the NCI appeared on the national television

program "Good Morning, America" to discuss NCI-sponsored studies of primary breast cancer treatment. The national number was given as a source of further information, triggering 851 calls in that month.

Other interview programs with Rose Kushner, as well as a New York Times article in April, generated telephone inquiries. In April, one quarter of the calls to the national telephone service concerned breast cancer.

The publicizing of other new NCI publications during the year through "Special Communications" also contributed to the growth in the public inquiries program. In February, the pamphlet Everything Doesn't Cause Cancer was announced in a special mailing to the health community. The booklet was offered in bulk quantities and, in the 6-month period from January to June, 546,165 copies were distributed--the second highest volume for a single publication in FY 1980 (as of June 30). In November 1979, a "Special Communication" announced the availability of the school edition of the Smoking and Health bibliography, and, by the end of March, almost 5,000 orders for this publication were received. The "Special Communication" on Hospital Days - Treatment Ways, a coloring book for children, also resulted in a large response.

The promotion by the OCC in July, August, and September of newly developed publications in other program areas is expected to generate a significant volume of requests during the last 3 months of FY 1980. These publications include Coping with Cancer, a resource for health professionals; Eating Hints, a nutrition guide for patients undergoing therapy; and Students with Cancer: A Resource for the Educator, which was developed in cooperation with the Candlelighters and the University of Kansas Medical Center. Other new publications in these areas produced by the OCC this year were the Coping with Cancer bibliography and Diet and Nutrition: A Resource for Parents of Children With Cancer.

Throughout most of FY 1980, the monthly volume of calls to the NCI's WATS-line remained above 2,000. The national number was widely publicized throughout the year in magazines and newspapers, accounting for much of the increased volume. Three events, however, stand out. Two occurred in January, when the 800 number was given on two nationally viewed television programs: the "Good Morning, America" program mentioned earlier and the PBS presentation "Joan Robinson: One Woman's Story," with 533 calls. The third event was the announcement in late June by the NCI of its clinical trials of Laetrile. The CIS number was included in the NCI press release about the Laetrile study, triggering 662 calls during the last 3 days of the month. Information materials had been developed in advance of all of these events to use in responding to inquiries, and extra personnel were available to handle the rush of calls.

The national CIS serves a backup to 32 local CIS numbers throughout the country and as a primary source for areas not served by a local number. It is a 7-day, 16-hours-a-day service and covers all 50 States. About 65 to 70 percent of the calls come from States having a local CIS, and each month

about half of the callers are referred to local units for additional help. Over a third of the inquirers receive followup services in the form of return calls, letters, or publications.

The contractor provides a trained cadre of professionals to handle calls during peak periods and has developed a training manual for its CIS staff. The national service not only serves as a backup for local units but also furnishes them with current informational materials on a monthly basis. These materials are part of the National Cancer Institute Update for the Cancer Information Service, a resource book containing the most recent authoritative information on the National Cancer Program. The Update includes articles, reports, releases, and other documents written by NCI officials and scientists and cleared for release by the NCI.

Public inquiries requiring custom letter responses declined somewhat in volume in FY 1980. One reason cited for this decline is the public's increasing use of the toll-free telephone service. Additionally, the development of form-letter enclosures to use in responding to some routine inquiries has cut down on the number of custom letters formerly prepared. For example, in the "Dear Abby" response, persons who requested that Clearing the Air be sent to another individual received a form letter explaining the Institute's policy of not sending unsolicited material to third parties.

As in previous years, current and past articles in the national media generated many of the inquiries requiring custom letter responses. An article in the September 1979 issue of Family Circle, giving both the Institute address and the national CIS number, resulted in 148 phone calls and 769 letters in September and October. In letters to the Institute, writers often cited old articles in Parade, Redbook, and the Reader's Digest. News stories on interferon, Laetrile, and the effects of DES on fertility and pregnancy stimulated a sizable number of public inquiries. The "Dear Abby" column offering Clearing the Air also led to many smoking-related inquiries, particularly questions about the health effects of secondhand smoke and smoking during pregnancy.

In general, about two-thirds of the custom letters come from the lay public. Areas of most concern to writers are risk factors in cancer, including environmental hazards, and information about cancer treatment, including NCI-supported programs. About 20 percent of the letters concern specific patients. Thé majority of professionals writing to the Institute request copies of reprints, articles, or other scientific data. Letters also are received from researchers, patients, and theorists in other countries.

As of June 30, the number of publications stored in the contractor's warehouse facility in Lanham, Maryland, totaled 15 million, compared to 9.5 million a year ago. The stock is inventoried each month.

Writers in the Section produced a number of publications: a Research Report on lung cancer; Breast Self-Examination; Agent Orange Fact Sheet; the glossary for Frontiers of Cancer Research: A Report to the People; and a larger, all-encompassing cancer glossary. Six columns were written for

"Search for Health", a syndicated newspaper feature distributed by the NIH Division of Public Information. Extensive editing was done on What You Need to Know About Dysplasia, Very Early Cancer and Invasive Cancer of the Cervix and the Training Program for Public Inquiry Interns.

The Section staff consisted of the Chief, Robert J. Avery, Jr., who also served as project officer of the Biospherics contract; Betty MacVicar and Frances Boak, writers; and secretaries Sheila Stempler and Esther Solomon. The last-named resigned in July 1980.

The Section is regularly assisted by two information interns who serve six-month tours. During the January-July period the interns were Kathryn Braun, from the University of Hawaii, and Nancy Carothers, from the University of Georgia. For the July-December term the appointees were Katherine Kane, from Queens College, New York, and Susan Sare, from the University of Oregon.

Reports Section

As in recent years, inquiries from the news media continued at a high level, reflecting interest in all areas of cancer research and activities of the National Cancer Institute (NCI) and the National Cancer Program (NCP). Section staff responded to approximately 2,500 inquiries from journalists, representing daily and weekly newspapers, magazines, and the electronic media, as well as newspapers and magazines for physicians and scientists. In addition, Section staff initiated contacts with the media on numerous occasions to remind them of upcoming meetings, press conferences, or major reports. NCI administrators and scientists were interviewed for news and comment programs of the major television and radio networks, as well as local stations throughout the country, and news organizations from many countries of the world.

The Reports Section prepared 17 news releases and announcements, including 12 on tests of specific chemicals for carcinogenicity. Other topics were the clinical testing of laetrile, pregnancy outcomes affected by diethylstilbestrol exposure, and bladder cancer risk resulting from ingestion of artificial sweeteners.

Section staff assisted science writers and general journalists in covering NCI-sponsored conferences, seminars and workshops, including NIH/NCI Consensus Development Conferences on "Adjuvant Chemotherapy of Breast Cancer," "Cervical Cancer Screening: The Pap Smear," and "CEA: Its Role as a Tumor Marker." These meetings also required extensive staff time for pre-meeting publicity and dissemination of information on the resulting consensus reports.

Several press summaries were prepared to assist journalists reporting on research papers presented by NCI scientists at annual meetings of the American Society of Clinical Oncology and the American Association for Cancer Research, held in San Diego, California. Two Reports Section staff members covered those meetings for OCC.

Press inquiries continued at a high level on potential and known causes of cancer, including cigarette smoking, asbestos, radiation, artificial sweeteners, occupational exposures, dietary factors, and chemicals tested in the NCI Bioassay Program. By the end of the fiscal year, most media inquiries concerning specific chemicals being tested for carcinogenicity were being handled by the National Toxicology Program (NTP) headquarters in Research Triangle Park, North Carolina, yet media inquiries concerning other kinds of cancer research kept the work level on a par with 1979. Renewed interest in DES (diethylstilbestrol) came from the March 1980 report of the Institute's Diethylstilbestrol and Adenosis Project. Interest in interferon resulted from early results from American Cancer Society-sponsored clinical trials, as well as from preparations for NCI-supported studies in the new Biological Response Modifiers Program, and indications that this scarce compound might be manufactured synthetically and more economically using recombinant DNA technology.

Interest in nutrition and cancer resulted from Congressional hearings, development of a NCI statement on diet and cancer risks, and a series of scientific workshops convened by the NCI Diet, Nutrition and Cancer Program. Results of clinical trials showing THC, the active ingredient in marijuana, to be effective in relieving severe nausea and vomiting in cancer patients receiving chemotherapy attracted much media interest, as did an NCI proposal to the Food and Drug Administration (FDA) that THC be made more widely available as a result of these tests. As in previous years, breast cancer attracted much of the interest from magazines directed largely to female audiences. A preliminary study by NCI epidemiologists showing excess cancers in petroleum manufacturing plants in Texas continued to draw interest that was reported nationally following reports of similar findings by National Institute for Occupational Safety and Health (NIOSH) and Occupational Safety and Health Administration (OSHA) investigators.

As usual, press interest continued on topics such as statistics concerning cancer occurrence and survival, Federal spending, Agent Orange and other toxic chemicals, and questions of conflicts of interest in the awarding of contracts and grants.

Section staff wrote and published articles on carcinogen testing and public policy (The Hastings Center Report, February 1980; Connecticut Medicine, September 1980); cancer chemotherapy (ASM News, March 1980; American Pharmacy, April 1980); the National Cancer Program (U.S. Medicine, January 1980) and results of two NCI consensus meetings ("The NIH Year, Contempo '80," JAMA, January 1980). A currently popular brochure, Breast Exams: What You Should Know, was released and reprinted twice during fiscal 1980; a new publication on coping with cancer, Taking Time, Support for People With Cancer and the People Who Care About Them, also was produced by Section staff.

During the year, Section responsibilities were reorganized. As a result, staff wrote all or portions of the Director's report to the Congress, 4 Congressional testimonies by senior NCI officials, 10 speeches for the director of NCI or NIH, and other reports and publications. Specific projects included assisting the Office of Program Planning and Analysis in preparing

the "National Cancer Program 1979 Director's Report and Annual Plan for FY 1981-1985," testimony for the NCI director for fiscal 1981 budget hearings and for nutrition hearings, speeches describing nutrition research, the cancer centers program, and the National Cancer Program.

A major project started this year was a report on the first eight years of the National Cancer Program. Three writers in the section produced major articles for the report. A senior writer in the section has responsibility for its day-by-day management, including recruiting and directing writers, photographers, artists, and editors, as well as for reporting progress to representatives of the National Cancer Advisory Board. This report will be published in fiscal 1981.

Medical problems associated with exposures to DES before birth received new attention following publication of a report in March 1980 that many daughters of women who took DES during pregnancy were themselves experiencing difficulties with pregnancy.

Publications on DES for health professionals and the general public, prepared initially in 1976, were revised in fiscal 1980 to reflect new perspectives provided by the research.

The Reports Section continued to cooperate with the Division of Cancer Cause and Prevention in disseminating information on findings of tests of individual chemicals for cancer-causing activity in animals. Information was distributed to Federal regulatory agencies, workers, industry, environmentalists, the news media, and the general public. In preparation for a planned transfer of all carcinogenicity testing responsibilites to the National Toxicology Program, located at the National Institute of Environmental Health Sciences in Research Triangle Park, North Carolina, Section staff achieved a smooth transition of public information responsibilities by arranging for specific requests for information to be handled by both Institutes, with media work done by NIEHS, and announcement of reports in the Federal Register to continue to be handled by staff of the Reports Section in the interim.

Several short articles on cancer research findings of significance for practicing physicians were prepared for inclusion in the "From the NIH" sections of the Journal of the American Medical Association. Articles of interest to the NCI and NIH communities continued to be prepared regularly for the NIH Record biweekly newspaper.

A Reports Section staff member served on two committees concerned with nutrition communications, the Subcommittee on Nutrition Education of the NIH Nutrition Coordinating Committee, and the Nutrition Working Group at NCI.

Three science writing interns served in the Section, as part of the OCC internship program: Donald E. Clayton, Marquette University, Milwaukee, Wisconsin; Chris Dipple, University of Kansas; and Julia Goplerud, University of Kansas.

Staffing shortages were a major problem during the year, as Section writers were promoted to other positions within the section or outside NCI, and limitations on hiring delayed replacing them.

At the beginning of the fiscal year, Reports Section staff consisted of Robert M. Hadsell, Ph.D., chief; Dennis B. Doris, Jr., Alice C. Hamm, Joan Hartman, Harriet P. Kennedy, Lorraine Kershner, and Patricia A. Newman, program writing staff; and Cynthia Walker, Chris Kunst, and Julia Singleton, secretaries.

By the end of the fiscal year, OCC reorganization had resulted in moving two senior writing positions to the Section. Writers in these positions have responsibility for speeches, testimony, and reports needed by the Director of NCI. The writers holding these jobs retired or resigned during the year, and Lorraine Kershner and Harriet Kennedy were promoted to fill these positions. Only one of the two resulting vacancies in the writing staff of the Section can be filled because of a reduction in allowed positions for OCC at the beginning of the year. That vacancy remains unfilled as of September 1980.

Robert M. Hadsell, Ph.D., was promoted to branch chief in OCC, and Patricia Newman was named chief of the Reports Section. In addition, Dennis Doris resigned.

Of the three resulting vacancies, only one had been filled by the end of the year. As a result, the Section has only three writers available for media work and science reporting as of the end of the year: Farrell Wolfson, Joan Hartman, and Alice Hamm.

Among the secretarial staff, all three secretaries working in the Section at the beginning of FY 80 have resigned. Lyn Bacon and Meg Withers have filled two of these positions, and one remains vacant.

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Public and Controlled Inquiries
Fiscal Year 1980

Month	Custom	Congressional/ Controlled	Noncustom	WATS-line Calls	Publications Distributed
October 1979	758	23	18,078	1,982	950,753
November	626	28	16,307	1,713	922,573
December	595	28	23,211	1,446	3,115,008
January 1980	606	20	21,450	3,687	1,980,133
February	696	31	12,577	2,351	1,246,076
March	932	24	14,820	2,471	1,286,695
April	884	28	10,481	2,282	889,907
May	825	74	12,731	2,075	1,203,774
June	848	20	57,958	2,862	1,446,626
*July	850	25	25,000	2,400	3,000,000
*August	850	30	25,000	2,400	3,000,000
*September	900	30	30,000	2,500	3,500,000
12-month total	9,370	361	267,613	28,169	22,541,545
Fiscal Year 1980 12-month total	12,292	379	190,684	25,459	15,395,051

*Projected totals, based on anticipated volume.

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